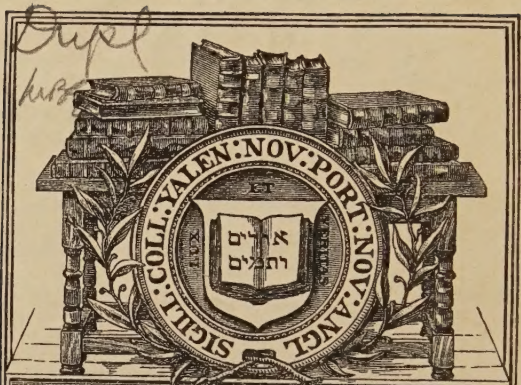

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ARTHUR RUSKIN, M.D.

V. M. Dow's
1822

OBSERVATIONS

ON THE

USE AND ABUSE

OF

MERCURIAL MEDICINES

IN

VARIOUS DISEASES.

BY

JAMES HAMILTON, JUN. M. D.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, AND PROFESSOR OF MIDWIFERY IN THE UNIVERSITY OF EDINBURGH.

With Notes and an Appendix, by ANSEL W. IVES, M. D.

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"*Observations on the Use and Abuse of Mercurial Medicines in various diseases. By James Hamilton, Jun. M. D. Fellow of the Royal College of Physicians, and Professor of Midwifery in the University of Edinburgh. With Notes and an Appendix by Ansel W. Ives, M. D.*"

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JOSEPH M. SMITH, M. D.

Fellow of the College of Physicians and Surgeons of the University of the State of New York, President of the Physico Medical Society, &c.

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SIR,

PERMIT me to inscribe to you, the American edition of Professor Hamilton's Observations on the Use and Abuse of Mercurial Medicines.

Our frequent and free discussions, embracing a liberal interchange of professional experience and opinions, have, for many years, been to me a delightful source of improvement. The subject of the following pages has, perhaps, more frequently than any other been the theme of our remark, and if aught is added to the value of the Observations of the distinguished author, it is owing in no small degree to your friendship. I take pleasure, therefore, in thus publicly acknowledging my gratitude, and expressing the high respect and unfeigned esteem

with which I am, Dear Sir,

Your friend and obedient servant,

A. W. IVES.

PREFACE

TO THE

AMERICAN EDITION.

Much has been written in favour of the use of mercurial medicines,—much to show the injurious consequences that have resulted from them; and as mercury, in its various forms, has probably been the means of more good and of more evil than any other article in the materia medica, partiality and prejudice have both been amply supported by facts.

In the following pages, so far as the observations of the learned Professor extend, they are impressed with the value of clinical experience, and the reader will not look in vain for the practical wisdom which he will anticipate from the name and celebrity of the author. His remarks are confined to a small number of diseases, in comparison with the whole to which the abuse of mercury extends; still, there is enough in this volume, in conjunction with the writings of Pierson, Carmichael, Mathias, Trotter, and others, to show conclusively, that mercurial medicines have been wantonly abused,—that they have often aggravated existing diseases and produced new ones, and that it is not an unimportant part of the physician's study, to learn to designate and remove the maladies which are caused by them.

But it is to be regretted, that for want of a more precise knowledge of the peculiar properties of mercury and the modes of its operation, writers have not yet assigned to

it an appropriate place among the curatives of disease, nor agreed upon such general principles for its administration as will enable the best judgment to use, without sometimes abusing it.

Instead of being prescribed to fulfil clear and well defined indications, as are blood-letting, opium, and most other efficient remedies, is not mercury by many rather given as a *specific*, or for *symptoms* of disease for which they know not what to give? It is acknowledged, that the difficulties connected with this subject are more easily pointed out than corrected. Though the writer has offered some observations to those of Professor Hamilton, with the design to show the various modes in which mercurial medicines operate, and the condition of the system most susceptible to their operation; still, he is aware that objections may be offered to theory, and different inferences deduced from practice; that the conclusions which appear irresistible to him, may be thought absurd by his readers, for "men are incompetent judges of the nature and force of evidence necessary to leave on others, the impression they themselves feel."

The circumscribed limits of an appendix, have precluded any thing more than some general remarks on the use of mercury in fevers, and the illustration of these by authorities which have just claims to deference. The writer would, however, take this opportunity to observe, that for valuable practical information, on the subject of mercurial medicines, there is perhaps no individual work which may be more profitably consulted than Professor Chapman's Therapeutics.

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INTRODUCTION.

AMONG the numerous poisons which have been used for the cure or alleviation of diseases, there are few which possess more active, and of course more dangerous powers than MERCURY. Even the simplest and mildest forms of that mineral exert a most extensive influence over the human frame, and many of its chemical preparations are so deleterious, that in the smallest doses they speedily destroy life. Accordingly, for some ages after mercury became an article of the *Materia Medica*, physicians recommended it only on the most urgent occasions—but within these few years British practitioners seem to have overlooked the necessity for such caution, and to exhibit that medicine with very little scruple.

The late eminent Dr. Parr, in his Medical Dictionary, (Vol. I. page 177) thus expatiates on the virtues and uses of that mineral. "As a medicine, there is scarcely an indication that mercury cannot supply. There is no more certain and active emetic than the mercurius vitriolatus; a more powerful laxative than the calomel; a more effectual and steady diaphoretic and stimulant than the mercurius muriatus; a more certain emmenagogue than calomel; a more effective errhine than the turpeth mineral; a more infallible sialagogue than either of its preparations."

Although few physicians, in prescribing an emetic, would select the mercurius vitriolatus, or for promoting a diaphoresis would advise the muriate of mercury, there can be no doubt, that many practitioners of the first respectability prescribe on every trifling occasion calomel, or the blue pill. Thus, calomel is now in Great-Britain almost the universal opening medicine recommended for infants and children, and a course of the blue pill (which is one of the mildest preparations of mercury) is advised, without any discrimination, for the cure of trifling irregularities of digestion in grown persons.

Dr. Falconar of Bath (in a paper inserted in the First Volume of the Transactions of the Medical Society of London, dated May 1809) has in strong language reprobated this practice, and has pointed out many of the dangerous effects of the indiscriminate use of mercury. His warning voice, however, has not been listened to ; for the employment of mercurial medicines has, for several years, become more and more extensive.

But when the effects of mercury upon the human body are accurately investigated and duly considered, it cannot fail to appear, that infinite injury must accrue from its use in many cases, and that whenever, from the nature of the indisposition, violent remedies are not absolutely required, a safe substitute for so hazardous a medicine ought to be found. It is the object of the author, in the following pages, to illustrate those propositions ; and in doing so, he readily avails himself of the recorded facts and observations of those respectable members of the profession, to whom proper deference is due.

SECTION I.

On the Effects of Mercury.

In detailing the changes produced upon the system by preparations of mercury, it is necessary to premise the well known fact, that there are some individuals on whom such medicines, though continued for a considerable length of time, have little or no perceptible influence, unless the activity of their form, or the magnitude of their dose, be calculated to excite immediate effects. For example, whatever the constitution of the person may be, a very few grains of the muriate of mercury given in substance, prove rapidly fatal, and large doses of the submuriate are quickly followed by vomiting and purging. On the other hand, instances of constitutions which are unsusceptible of the influence of the ordinary doses and preparations of mercury, are very few in comparison with those which are affected by the smallest quantities of that mineral.

Preparations of mercury, exhibited either internally or externally for any length of time, in-

crease in general the action of the heart and arteries, and produce salivation, followed by emaciation and debility, with an extremely irritable state of the whole system.

These effects of mercury are expressly mentioned, or virtually admitted, by every author, ancient and modern, who has directed its use; and it must appear very extraordinary, that their full influence should have been hitherto misunderstood, or at least not sufficiently regarded.

The first effect enumerated, is an increased action of the heart and arteries, that is, a more than usually rapid circulation of the blood through every part of the body. This also occurs in feverish and in inflammatory disorders, and in all is accompanied with an augmentation of the animal heat. But in feverish disorders there is neither any apparent change upon the sensible qualities of the blood, nor any unusual flow of the ordinary secretions; while in inflammatory affections the sensible qualities of the blood are materially altered, and either some of the secretions are furnished in greater abundance, or topical congestions, that is, obstructions in the vessels of particular parts, take place.

Accelerated circulation of the blood, in consequence of the use of mercury, is attended with the most obvious of the circumstances which arise from inflammation. Blood drawn from the arm of the most delicate and debilitated individual, subjected to a course of mercurial medicines, exhibits the same buffy crust with blood drawn from a person labouring under pleurisy, and the secretions from the skin or from the kidneys are greatly increased.

In inflammatory complaints, topical congestions occur more frequently than increase of secretions, while the reverse of this happens where the inordinate action of the heart and arteries is occasioned by the use of mercury.

There is another remarkable difference. In inflammatory diseases, the muscular strength, in many instances, continues unimpaired till towards the termination of the complaint. Thus, every practitioner knows that individuals labouring under pleurisy have walked several miles within a few hours of death. But from the time that the influence of mercury becomes evident, the general strength declines rapidly.

It appears, therefore, that the increased action of the heart and arteries excited by mercurial medicines, produces not only the same injurious changes upon the body with those arising from inflammation, but also certain effects peculiar to itself. This important fact has been incidentally noticed by numerous authors, although the natural inference to be deduced from it has been very much overlooked. Dr. Carmichael expressly says, "Mercury induces a specific fever, different from all others, and attended with an increase of the various secretions."*

Reasoning upon the subject, it might be concluded, that if there be an inordinate action of the heart and arteries, attended with an altered state of the blood and with debility, while the increased secretions accompanying this inordinate action have no tendency to allay it, the health must be rapidly undermined; and if there be ulcerations in any part of the body, they must as certainly degenerate into malignant sores, as blistered surfaces or scarifications mortify in cases where the living powers are much exhausted.

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* Essay on the Venereal Disease, &c. page 58.

Experience has proved the reality of such conclusions, but prejudice and inaccurate observation led many practitioners of deserved reputation to attribute those effects of mercury to other causes, till Mr. Mathias published his valuable remarks on what he terms the mercurial disease. Thus, before Mr. Mathias's publication, the injurious effects of mercury in some syphilitic cases were attributed to the original virus operating on scrofulous, or cancerous, or scorbutic constitutions,—or to some complication or anomaly which was inexplicable.

Mr. Mathias has unequivocally shewn, that certain dangerous changes upon ulcerations originally syphilitic, and certain derangements of health, occur wherever mercury has been administered in too acrid a form, or in too large a quantity ; and his remarks are confirmed by the experience of every practitioner who has, with extensive opportunities of observation, been attentive to the phenomena. He imagines that the action of the mercury in such cases is of a specific or a peculiar nature ; it more probably, however, is merely in an inordinate or excessive degree, and in no other respect different from

what it is in every case.* It is a well known fact, that exposure to cold, bodily fatigue, and irregularities of diet, particularly indulgence in intoxicating liquors, have aggravated the severity and malignancy of syphilitic ulcerations, whether primary or secondary. But as all those different causes concur only in one respect, viz. in exciting inflammation, it is evident that mercury, when it affects the system, must be productive of equally injurious changes upon the ulcerations in question and upon the general health, because it probably induces a more violent degree of inflammation, than exposure to cold or irregularities of diet.

Upon the same principle may be explained the fact noticed by all practical writers, that scrofulous sores, and scirrhous tumours, and cancerous affections, in certain stages of their progress, are much aggravated by preparations of mercury.

Dr. Blackall has shewn, that, from the same cause, thickening of various membranes, particularly the pericardium and pleura costalis, has ensued,—and it is more than probable, that the aching pains which so often follow courses of mer-

* *Vide* Mathias on the Mercurial Disease, 8vo. Lond. 1810. *passim.*

cury, are owing to partial adhesion and thickening of the cellular membrane in contact with the fascia and extremities of the muscles. From Dr. Blackall's cases, too, there is reason to believe, that the inflammatory diathesis induced by mercury may continue for a very considerable time after the mercury had been laid aside, and without any manifest signs. When individuals in this state are subjected to accidental exposure to cold, or indulge in irregularity of living, a violent and anomalous indisposition takes place, which is apt to terminate fatally, or to occasion a broken state of health.*

Secondly,—Salivation, or an excessive and unusual flow of saliva, in general follows the increased action of the heart and arteries, and is preceded by a certain metallic taste in the mouth, and is attended with a peculiar odour of the breath, different from what is ever perceived in any natural disease.

When an increase of any of the ordinary secretions takes place during the course of inflammatory affections, the local complaints are relieved. But the excessive flow of saliva, in consequence

* Blackall's Treatise on Dropsy, page 111.

of mercury, is accompanied with more or less local inflammation of all the parts within the mouth. In some cases, besides the ordinary ulceration of the gums, and loosening and final separation of the teeth, the tongue, moveable palate, &c. swell and ulcerate to a frightful degree.

Thirdly,—Emaciation so commonly follows a course of mercury, that several eminent physicians, about the beginning of last century, imagined that mercury had a natural tendency to destroy the fatty particles. The celebrated Van Swieten (§ 147) says, "All the pinguid humours are dissolved by the action of mercury, all the viscid are attenuated, and discharged out of the body, through various outlets, together with the virus adhering to them; therefore, when the patient's body is totally emaciated," &c.

This emaciation has generally been supposed to proceed, partly from the diminished appetite for food, and chiefly from the increased secretions and excretions; but as the observations of Dr. Blackall have proved that the serum of the blood passes off with the urine, it is more than probable that the excessive rapidity of the emaciation is occasioned by that circumstance.

Fourthly,—Debility, with an irritable state of the whole system, accompanies the emaciation, and of course occurs in various degrees in different individuals. The late Mr. Benjamin Bell, whose practical knowledge was so pre-eminent, comprehends in one short paragraph (page 188, of the Second Volume of his valuable Treatise on the Lues Venerea) an emphatic list of those effects of mercury. He remarks, that besides the usual symptoms of fever, "Mercury is apt to excite restlessness, anxiety, general debility, and a very distressful irritable state of the whole system.

The consequences of this effect upon the nerves are different upon different subjects. In some, temporary delirium takes place—in others, palsy or epilepsy supervene, and in many the memory and judgment are more or less permanently impaired. Instances, too, have occurred, where sudden death has supervened, apparently in consequence of a very trifling exertion or agitation. Mr. Pearson has well described such cases under the title of Erethismus. He says, this state "is characterised by great depression of strength, a sense of anxiety about the precordia, irregular action of the heart, frequent sighing, trembling,

partial or universal, a small, quick, and sometimes intermitting pulse, occasional vomiting, a pale contracted countenance, a sense of coldness ; but the tongue is seldom furred, nor are the vital or natural functions much disordered."

It may be alleged, that these are extreme cases, and it must be admitted, that in many instances, those very violent effects do not follow. Delicate individuals, however, particularly those who have been accustomed to a sedentary life, and, therefore, in an especial degree, females, generally experience, after a course of mercury, various modifications of disordered feelings, communicating the idea of imaginary diseases, which unfit them for the duties of life, and render existence a burden.

Among the anomalous complaints arising from this cause, may be enumerated, impaired or capricious appetite for food, with all the ordinary symptoms of indigestion, particularly retchings in the morning, and flatulency—disturbed sleep, with frightful dreams—impaired or depraved vision—frequent aches and pains in different parts of the body----occasionally such sudden failure of strength, as if just dying, and at other times vio-

lent palpitations at the heart, accompanied with difficulty of breathing. Along with all these complaints, there is such a wretchedness of look, with such a propensity to brood over their miserable feelings, that it is extremely difficult to persuade the relations or the attendants of the patient that there is no serious indisposition. Indeed medical practitioners who are not accustomed to weigh with mature deliberation all the complications of symptoms, are generally deceived in such cases, and involuntarily add to the alarm both of the unhappy sufferer and of the attendants.

"I might cite all writers on the Materia Medica," Dr. Falconar, in the paper alluded to, (page 110) says, "for authorities that the long continued and frequent use of mercury is not free from danger; that among other ill effects, it tends to produce tremors and paralysis, and not unfrequently incurable mania. I have myself seen repeatedly, from this cause, a kind of approximation to these maladies, that imbittered life to such a degree, with a shocking depression of spirits, and other nervous agitations with which it was accompanied, as to make it more than commonly probable, that many of the suicides, which disgrace our country, were occasioned by the intol-

erable feelings that result from such a state of the nervous system."—To the truth of these remarks every unprejudiced physician who has been in extensive practice must bear testimony.

Such are the ordinary and well known effects of mercury when given in sufficient quantity to act upon the human body,—but in many cases other deviations from health ensue.

Of these, the most common is excessive diarrhœa, accompanied often with discharges of blood from the bowels. This is so apt to occur in some individuals, even though the mercury be administered by being rubbed upon the surface, that every writer upon lues venerea has mentioned this effect as one of the great obstacles to the cure of the disease.

The random experiments of speculative physicians upon patients labouring under scrofulous affections have proved, that in some cases ulcerations of the soft parts, and caries of the bones, originally arising from ill-conditioned states of the system, are much accelerated in their progress by mercurial medicines. Of this many melancholy examples might be cited.—A boy

about eleven years old had a sore on one cheek, with an affection of the jaw, which were attributed to the mismanagement of a dentist in extracting a carious tooth. A physician was consulted, (after the patient had suffered for some months), who immediately prescribed a regular and full course of mercury. In a short time ulcerations in the throat appeared, the nose sunk, and one of the eyes was nearly destroyed, while the general health became so seriously injured, that death followed in a few months. Can it be for a moment doubted, that all those morbid changes proceeded from the inflammatory action of the mercury?

Some medical men, from misunderstanding such cases, have supposed that the affections of the throat and nose, with caries of the bones, which have so notoriously accompanied lues venerea since that disease became known to mankind, are chiefly, or entirely occasioned by the use of mercury. But the uniform experience of all physicians practising in tropical climates strongly contradicts this hypothesis. Both in the East and West Indies immense quantities of calomel, together with mercurial frictions, are prescribed for the cure of various diseases, and are

productive often of long and continued salivation, without affecting any other bones than the teeth and their sockets.

Mental derangement, with eventual fatuity, has sometimes followed a course of mercury; and the probable reason why it does not do so more frequently, is, that the irritable state of mind which usually precedes actual derangement, commonly alarms the attendants, and leads to active precautionary measures.

Another consequence of the use of mercury is a very violent affection of the skin, originally hinted at by Mr. Benjamin Bell—and more lately particularly described by Dr. Alley of Dublin*, Dr. Spens of Edinburgh†, and Mr. Pearson of London‡. It has been styled hydrargyria by Dr. Alley, erythema mercuriale by Dr. Spens, and eczema mercuriale by Mr. Pearson.

This eruption is usually preceded by heat and itching of the skin, a frequent pulse, and a

* Essay on a peculiar Eruptive Disease, by Dr. Alley, Dublin 1804.

† Edinburgh Medical and Surgical Journal, No. I.

‡ Observations on the Effects of Various Articles of the Materia Medica in the Cure of Lues Venerea, by John Pearson, F. R. S. Second Edition, page 166.

white tongue. Most commonly it begins on the inside of the thighs, or about the flexures of the arms ; and Mr. Pearson asserts, that it generally attacks the anterior parts of the body before the posterior. The parts affected are first of a faint red colour, and gradually the shade becomes deeper. The eruption proceeds by slow degrees over the whole surface, accompanied with an evident tumefaction of the skin, with great tenderness and heat, and most troublesome itching.

Examined by a magnifying glass, the eruption appears distinctly vesicular, though the vesicles are so minute that they cannot be distinguished by the naked eye. These minute vesicles contain at first a pellucid fluid, and are each surrounded by a circular redness. From the great itching they are soon and inevitably ruptured, and discharge a thin acrid fluid, which irritates and excoriates the surface, and aggravates greatly the patient's sufferings. In this way the disease proceeds from one part to another, till the whole person becomes affected.

When the vesicles are first ruptured, the fluid which exudes, though thin, stiffens the linen, but after a few days the discharge becomes thick, and

emits a most offensive smell. As the different parts of the body are affected in succession, the exudation is thin in one part, and thick and adhesive in another. In a day or two the adhesive discharge ceases, the cuticle loosens, assuming first a pale brown colour, and then turning nearly black, when it separates in large flakes, leaving a faint redness on the exposed surface. Sometimes this desquamation is succeeded by a second or third, in the form of white scales, like farinaceous powder. In some cases the hair and even the nails have also separated along with the epidermis.

The duration of the disease varies from a fortnight to eight or ten weeks, or even longer. Dr. Alley has described three varieties, viz. hydrargyria mitis, simplex febrilis, and maligna; and out of forty-three cases which he witnessed within ten years, eight patients died. Mr. Pearson, on the other hand, asserts that he has not seen a single fatal case.—For a more particular account of this loathsome and distressing affection, the reader is referred to Dr. Spens's Observations already quoted, Dr. Alley on Hydrargyria, Mr. Pearson, second edition, page 166, and Dr. Bateman, page 254.

These morbid effects of mercury do not seem to depend entirely upon the quantity or mode of preparation of that medicine which may be administered to the individual, for while it is an established fact, that the mildest preparations employed externally, if exhibited in too large doses, or continued for too great a length of time, are followed by some of the bad effects above enumerated, it is also notorious, that very small quantities of mercury have suddenly proved equally injurious. Thus, in a lady, (whom the author attended some years ago along with his intelligent friend Dr. Farquharson,) who had had such small doses of the blue pill, combined with opium, for three nights successively, that the whole quantity amounted to no more than five grain of the mass, salivation begun on the fifth, day, and notwithstanding every attention, the tongue and gums became swelled to an enormous degree, bleeding ulcers of the mouth and fauces took place, and such excessive irritability and debility followed, that for nearly a whole month her life was in the utmost jeopardy.—Every practitioner must have met with similar cases.

Another common consequence of a very small dose of mercury, is an excessive bowel complaint.

In many individuals a permanent irritability of the stomach and intestinal canal has followed the accidental exhibition of a few grains of calomel.

Various other anomalous affections have been known to succeed the use of mercury. Thus, Dr. Falconar mentions, (Memoirs of the Medical Society of London, Vol. III. page 381), that "he once saw a dropsy of the breast produced by the use of a mercurial remedy for a redness in the face, which it effectually removed, but instantly produced a dropsy of the chest, terminating in death." Dr. Blackall has recorded similar cases.

In his observations on the hydrargyria, page 40, Dr. Alley asserts, that he had seen "that eruption appear over the entire body of a boy about seven years old, for whom but three grains of calomel had been prescribed ineffectually as a purgative."

Many other instances of violent effects from a small dose of mercury might be cited. Besides, the following case seems to prove, that mercury may remain inert for a considerable time in the habit, and afterwards, by some inexplicable circumstance, may become active.

A lady, the mother of four children, in the twenty-eighth year of her age, had a bad miscarriage at the end of the fourth month. When the author was called, she was very much reduced from the loss of blood, and required the ordinary palliative remedies. Three days after the first visit she complained of a bad taste in her mouth, with soreness of her gums, and on the following day salivation took place. On inquiring into the circumstances of her previous history, it was learned, that four years before, she had had for a fortnight a course of the blue pill, which had only slightly touched the gums, and it was solemnly asserted, that she had never again taken any preparation of mercury, and had been in general good health.

The salivation was therefore at first attributed to some accidental cause, but when it was found to be proceeding with great violence, the medicines which the lady had been taking for the palliation of the complaints produced by the abortion, were carefully analyzed, from a suspicion that some mercurial preparation might have been mixed with them, but it turned out that they contained no mercury. The most anxious and unremitting attention, and the careful exhibition of

all the ordinary remedies which have been employed in similar cases, proved unavailing. The salivation, with the usual consequences of excessive emaciation, debility, and irritability, continued for above twelve months. Occasionally for a day or two it was checked, but alarming vomiting, with threatening sinking of the living powers, supervened. The patient, however, eventually recovered.*

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* I am indebted for the following case to J. M. Smith, M. D. It was not so long in this instance, after the mercury was taken, before it excited its specific action as it was in Professor Hamilton's case; but if a medicine will produce effect after lying dormant in the system three months, I know not why it may not after three years. The judicious and practical observations of Dr. Smith on the susceptibility of the system to the operation of medicines, render unnecessary any apology for the length of this note.

"In November, 1811, I was requested to visit a lady about 55 years of age. Her symptoms were small and frequent pulse, tongue white with a brownish discoloration through the middle, protracted constipation of bowels, hot skin, head ach, delirium, and great prostration of strength. After premising purgative medicines which effectually relaxed the bowels without mitigating the febrile symptoms, I put her on the use of sub-muriate of mercury, combined with pulvis antimonialis and opium. This preparation, containing about two grains of the sub-muriate in a dose, was repeated every three or four hours with the design of exciting ptyalism. This plan of treatment was continued three or four days, with the occasional administration of other remedies as the circumstances of the case seemed to require. At the expiration of this period, symptoms of ptyalism not being manifested, and the patient rapidly sinking into typhus, I was induced to abandon the mercurial treatment, and to pursue a more stimulant course; accordingly I advised the liberal use of wine and other cordial remedies. The good effects of this plan were soon discernible. In a short time she became convalescent, and in a few weeks was able to leave her apartment and visit abroad.

It is universally acknowledged, that although the morbid effects of mercury may be induced very suddenly, and by very small quantities of the medicine, in certain constitutions, there are

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I have thus stated in general terms the history of her case, as preparatory to the understanding of the subsequent effects which the mercury is supposed to have occasioned.

Three months after her first attack, I was again desired to visit her. She exhibited at this time all the violence of a mercurial salivation, and, with much difficulty, related the manner of its accession. Three days before, after considerable exposure to humidity and cold, she observed her breath to smell disagreeably, and the saliva to flow copiously. The fœtor of breath increased to that degree that she avoided company, fearing her presence would be offensive. At the same time her gums became sore and tumid, and at length ulcerous; the tongue was swoln and loaded with much white mucus, and excessively sensible; the salivary glands, generally, were also affected with intumescence: indeed, so severely was she affected, that she had scarcely the power of utterance. So correspondent were her symptoms with those which mercury is known to occasion, that I did not hesitate recognising her present illness as the effect of that medicine. Not suspecting at this time that the affection of her mouth was produced by mercury received into the system at a period so long previous as when she laboured under typhus, I made special inquiry whether she had recently taken any medicine, and was answered in the negative, and informed, that she had taken nothing, of a medicinal nature, since she was under my direction while sick with fever. Not doubting her veracity, and being persuaded that her disease was a mercurial ptyalism, I was led to inquire to what source it could be attributed. While engaged in this inquiry her former illness occurred to me, and the quantity of calomel taken at that time without producing any sensible effects. To account for the disease from this source appeared to be deviating from correct etiological reasoning, yet so decidedly marked was her disease, that I felt no hesitation in assigning this as the cause. For her relief I prescribed the occasional use of flowers of sulphur and cream of tartar, with a view to keep the bowels in a soluble state; and directed the mouth to be frequently washed with a detergent gargle: under this treatment she soon recovered a state of perfect health.

no marks by which such peculiarities of habit can be distinguished, and there is no method of arresting their progress.—Inflammatory complaints may be subdued by bloodletting and other remedies ; but in many cases where the mercurial ac-

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The susceptibilities of the system form a highly interesting and important part of its economy. They vary at different periods of life, and are either changed or modified by all the circumstances which tend to diversify the states of health and disease. Some constitutions are extremely sensible to the action of certain agents, while others will receive the full force of their impressions without imparting any evidence of their operation. A similar remark will apply to the same individual, under different conditions of body, and at distant periods of time.

In the case just related, the patient was not susceptible of the effect of mercury at the time of its administration, nor until three months afterwards. That this medicine should remain in the body during that period, and then produce its specific disease, is indeed a surprising anomaly. But on reflection, it will be perceived that the phenomena of the case are analogous to others with which physicians are familiarly acquainted. The contagious principles of smallpox, measles, syphilis and hydrophobia, and I may add the miasmata arising from corrupted animal and vegetable matter, remain in the system for a considerable time before they show their specific action on the body. The poisons of smallpox, measles, and some other diseases, usually evince their morbid powers within a definite period, while miasmata, and the virus of hydrophobia are in this respect extremely variable, producing disease sometimes within a few days, and at other times not until after a lapse of several weeks or months. Contagious disorders are, for the most part, so regular and certain in their accession after the reception of their respective poisons in the system, that we must regard their occurrence as arising out of a susceptibility which is common to every individual. On the contrary, the comparatively few who sicken on exposure to the influence of miasmata and the hydrophobic virus, and the difference of time in their several attacks, show conclusively that the susceptibilities of the constitution are numerous and changeable.—The nature of these

tion takes place, such means are either inadmissible, or inefficacious.—That in warm climates

susceptibilities would form an interesting subject of medical inquiry, which would comprehend some of the most important considerations which relate to life in all its stages, as well as the cardinal principles of hygiea.

I have long been of opinion, that in order to the successful operation of mercury on the system, there should be a peculiar susceptibility of receiving its impressions; and that when this condition of body does not exist, it is impossible to effect the objects for which that medicine is usually prescribed. To define particularly in what this susceptibility consists, is incompatible with these remarks. We may however generally observe, that it seems to depend upon that state of the system in which there is neither a morbidly energetic, or very feeble action of the heart and arteries; and in which the functions of these organs are not disturbed in any considerable degree by the immediate operation of morbid agents upon them. A state of perfect health is probably the most favourable for mercury to show its effects on the constitution; and every deviation from that state which involves the vascular system in diseased action beyond certain limits, destroys the susceptibility of the body of being affected by mercury, and consequently renders it necessary to alter the condition of the system before that medicine can be made to operate. In the case under consideration, it is difficult to determine in what situation the mercury was located, in the interval of its administration and its action on the body. But whether it remained in the stomach or bowels, or was assimilated and carried into the circulation, it is of no consequence to know, since in either case, our exposition of the phenomena would be the same. The novelty of the case consists in the gradual developement of a susceptibility of being affected by mercury. The steps of this process we are unable to trace, having no particular knowledge of the state of the patient from the time of her advanced convalescence to the occurrence of ptyalism. The question here presents itself, whether if calomel had been given in considerable doses, immediately subsequent to her recovery from fever, ptyalism would not have been readily excited. This matter is extremely doubtful. Some constitutions resist the operation of mercury, when freely applied, both internally and externally. In some instances, however, quantity may compensate for diminished susceptibility, and in this way it is possible that salivation might have been induced".—I.

those violent effects of mercury occur infinitely less frequently than in countries where there are considerable alternations of heat and cold, cannot be denied, and ought to be especially noticed.* But that they sometimes do take place even within the tropics, can be proved by the most conclusive evidence.

SECTION II.

On the Powers of Mercury in subduing the Syphilitic Virus.

Notwithstanding all the hazards resulting from the use of mercury, there can be no doubt that it has certain MEDICINAL virtues, the most remarkable of which is the power of curing the diseases occasioned by the Syphilitic virus.

* There is a practical inference to be drawn from this well known fact, which if duly regarded, in determining on the propriety and mode of a mercurial course, would no doubt frequently serve to lessen exceedingly the danger and uncertainty of the result. Although the susceptibility, so favourable to the operation of mercury, which is induced by a residence in a warm climate, can not be artificially formed in a cold one, still, the existing difference, arising as it does from well known causes, presents, a general principle to the physicians of no small importance in determining on the use and prognosticating the effects of mercurial medicines. If he relax the rigid fibre of his patient by the lancet; if he regard his age, temperament, habit, and condition; if he impose on him confinement in an elevated and uniform temperature; restrict him to a vegetable and milk diet, and encourage by plentiful dilution and the frequent use of the warm bath a free discharge from the skin; he will be able to form a pretty correct judgement with regard to the requisite quantity, and the effects which will be produced by it.—I.

It is inconsistent with the object of this work, to enter into any minute details respecting those diseases; and therefore a very brief notice of the influence of mercury in removing them is all that could have been required, had these pages been published ten years ago.

That various animal poisons, such as those of smallpox, measles, scarlatina, &c. produce definite symptoms, which, after a certain number of days, spontaneously cease, leaving the individual no longer susceptible of the influence of the poison, is a fact too familiar to need illustration. On the other hand, it has been commonly supposed, (till within these very few years), that the diseases arising from the Syphilitic virus, if left to the natural powers of the constitution, at least among the inhabitants of the northern parts of Europe, are seldom removed*; and even at the present time, it is not doubted, that where such diseases have been artificially cured, the individual re-

* "I have asked the opinion of several surgeons of great practice and abilities respecting this question, Whether constitutional symptoms of Syphilis do ever spontaneously amend? and no one has decidedly replied in the affirmative; whilst all, without hesitation, agreed that they were generally progressive till checked by the effect of mercury." Abernethy's Surgical Observations on Diseases resembling Syphilis, page 47.

mains liable to be affected in the same way by a fresh application of the same virus.

Fallopius, and several other writers of the sixteenth century, quoted or referred to by Astruc, have well described the ravages produced by the Syphilitic virus, when it first attracted the notice of Europeans. And hundreds of modern authors might be named, whose observations establish the fidelity of the ancient descriptions, but it is sufficient to refer to the works of two of the most eminent British surgeons, whose authority on practical subjects is universally acknowledged, viz. the late Mr John Hunter, and the late Mr. Benjamin Bell.

The account of the natural progress of Syphilis given by Mr. Hunter, was founded not only on observation, but upon actual experiment, as he had the boldness to insert with a lancet the virus into the parts liable to that disease, of a male, probably and apparently himself. The result of the experiment he details in page 325, of his valuable treatise.

It was discovered about the beginning of the sixteenth century, that mercurial preparations have the power of removing all the morbid affec-

tions produced by the poison in question, and the impartial observation of the wisest and the best of the profession, in different parts of the world, during successive generations, seems to have established the fact of its efficacy in that respect.

Every now and then, indeed, speculative men have urged objections against that remedy. Mr. Pearson, senior surgeon to the Lock Hospital of London, whose practical knowledge cannot be questioned, and who, enjoying so many opportunities of studying the broad page of nature, has not bewildered himself with fanciful lucubrations, has noticed these objections in the following words.

* " Amidst the several discordant opinions which have been maintained and defended concerning the most successful mode of treating lues venerea, the fortunes of mercury have been various and fluctuating.

" With a certain proportion of medical practitioners it maintained a steady and undiminished reputation ; by many it was disparaged and undervalued, as a mineral possessed of no decided

* Pearson, second edition, as before quoted, p. xvi.

efficacy; and by some the administration of it was exploded altogether. Even in the time of Morgagni this medicine was interdicted by some of the most eminent physicians in Italy; and strong prejudices against the use of it subsisted, according to the testimony of Murray, so late as the middle of the present century.

"How far reason, or fashion, or caprice, was predominant in conducting to such a determination, I presume not to decide: Certain it is, that notwithstanding the puny clamours of ignorance, the crafty discourse of interested empiricism, and even the imperious voice of authority, mercury continues to this day the medicine commonly employed, and alone relied on, in all truly venereal cases. And although there are many who pretend to exclude it from their nostrums, yet their perfidious declarations are occasionally betrayed by the salivating qualities of that mineral, which, in defiance of every disguise and combination, will sometimes appear, to the detection of the impostor."

Mr. Blair, also surgeon to the Lock Hospital, concurs cordially in Mr. Pearson's sentiments on this subject*.

* *Vide* Memoirs of the London Medical Society, vol. 5. page 286.

Infinite trials have from time to time been made with numerous vegetable and mineral substances, both in private practice and in public hospitals, and the result, till lately, has hitherto been, a conviction that mercury alone seems capable of arresting the progress of complaints arising from the Syphilitic virus, and of eradicating altogether that poison from the human constitution.

Almost all the empirical or patent medicines for the cure of Syphilis contain mercury in a disguised form, although the venders pretend that their remedies are vegetable preparations, as was long ago remarked by Mr. Bloomfield and by Mr. Pearson, and by every physician capable of reasoning. Those who, trusting to their own imagination, may entertain any doubt on the subject, are referred to a pretty authentic document, viz. an act of parliament passed in the year 1812. containing an enumeration of all the patent medicines sold in this empire. Besides numerous kinds of pills, (the active ingredient of which must be some mineral substance), there are about twenty-five or twenty-six preparations, under the title of syrups, drops, specifics, lotions, &c. and although some of them are disguised with sarsapa-

rilla, or guaiac, or some other vegetable substance, their occasional effects upon patients have long ago proved that they contain some concentrated form of mercurial oxyde. Perhaps the diet drinks may form an exception, and certainly the only one, to this remark.

While these pages were preparing for the press, the author had occasion to learn accidentally, that a diet drink had obtained so much celebrity in a certain district of America, as to be considered infallible by the best informed individuals over an immense extent of country. It was prepared by an old female slave, on an estate which was purchased by a friend of the author. The gentleman, on learning that one of his people possessed such an invaluable vegetable remedy for Syphilis, made a very minute and particular inquiry into the subject, and he obtained the most satisfactory evidence, (confirmed at last by the confession of the old woman herself), that the vegetable infusion contained in solution the corrosive sublimate. It was proved that she procured annually a quantity of that medicine from a considerable distance, and that her only rule in the strength of the solution was the taste of the medicine.

That in some parts of Europe mercury has been for many years discontinued as the remedy for Syphilis, was a historical fact, which till lately, made little impression upon British practitioners. They considered it, like the prepossessions in the same countries against removing the itch by means of sulphur, to be a melancholy evidence of the low state of science. Accordingly, when the medical officers of the British army, employed on the Continent during the late war, found that both in the German and Portuguese regiments Syphilitic complaints were treated without mercury, the prejudice was (as Dr. Fergusson has strongly expressed it) attacked without quarter. But the obstinacy with which even official orders for the employment of that mineral in the complaints alluded to were resisted, led that intelligent physician to a minute investigation of the consequences of the foreign practice. He ascertained, that the primary sores were healed without mercury, and that the secondary symptoms gradually disappeared under the use of vegetable decoctions.

Facts so contrary to what had been expected, were very naturally explained, on the supposition that the Syphilitic virus had become ex-

tremely mild among the natives of Portugal, in consequence of habit and of universal diffusion. But it was soon found, that although the Portuguese seemed to suffer nothing from Syphilitic complaints, the infection communicated from them to the British officers and soldiers was of the most virulent nature.

This difference in effect of the same virus evidently arose from the constitutions of the individuals subjected to its influence having been in very opposite states; for while the inhabitants of Portugal, from their vegetable diet, &c. were extremely relaxed, the British soldiery were much predisposed to inflammatory affections.

It has been long understood, that the effects of several of the varieties of morbid animal poisons are not in proportion to the intensity of the virus, but apparently according to the constitution of the person affected. If any illustration of this were required, it would be sufficient to state a single one, which must be quite familiar to all the older members of the profession. When inoculation for the smallpox was universally practised, different children, inoculated at the same time with matter obtained from the same subject,

had the disease in every degree, from the mildest form to the most confluent variety.

The observations made by Dr. Fergusson (of which he has given a valuable sketch in the Fourth Volume of the Memoirs of the Medico Chirurgical Society of London, page 1), and of several other intelligent army practitioners, upon the treatment of Syphilis in Portugal by vegetable medicines, led Mr. Guthrie and Mr. Rose, in the year 1815, to make certain experiments on patients affected with such complaints in military hospitals in England. Similar experiments have since 1816 been conducted in the military hospitals of Edinburgh, under the very able superintendence of Dr. Hennen, Deputy-Inspector of Hospitals, and of Dr. Thomson, Regius Professor of Military Surgery in the University of Edinburgh.*

From those experiments it has been supposed,—that all sores on the sexual parts may be healed without mercury in any form whatever—

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* For a particular detail of those experiments, the reader is referred to the Edinburgh Medical and Chirurgical Journal, No. 53 and 54, and the Memoirs of the Medico Chirurgical Society of London, vol. 8 pages 349 and 550.

That where that medicine has not been used, secondary symptoms do not appear in a larger proportion than in one in ten----that such symptoms are of a milder nature than similar ones occurring after the use of mercury----and, that those secondary symptoms gradually cease, under the very simple treatment of confinement to bed, quiet, and a vegetable diet.

With great deference to the gentlemen who have conducted those experiments, the author ventures to draw the following conclusions, trusting that they are fully warranted by the facts which they themselves have recorded.

First,---That, as Mr. Abernethy*, Mr. Mathias†, and Dr. Carmichael‡, had previously advised, primary sores ought not to be dressed with topical applications, at any rate till their real nature be ascertained.

Secondly,---That in the treatment of Syphilis every possible precaution ought to be adopted,

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* Surgical Observations on Diseases resembling Syphilis, page 49.

† The Mercurial Disease, &c. page 114.

‡ An Essay on the Venereal Disease, &c. by Dr. Carmichael, &c. page 31.

to guard against the occurrence of general or local inflammation, such as, confinement within doors, quiet, warmth, vegetable diet, &c.---It should, however, be remarked, that every intelligent practitioner, from the days of Astruc, had learned this most important lesson, and it had been very strongly impressed on the minds of army surgeons, by many untoward and distressing cases, during the active campaigns of the last war.

Thirdly,---That a much milder course of mercury, provided the above precautions be attended to, is sufficient for the cure of Syphilis, than had in general been hitherto supposed; thus confirming the observations of Mr. Mathias* and Dr. Carmichael†.

Fourthly,-----That decoctions of sarsaparilla, guaiac, &c. are, in the complaints under consideration, not superior in efficacy to water-gruel.---- In Dr. Fordyce's cases, and in those recorded by Mr. John Hunter, Mr. Abernethy, Mr. Mathias, Dr. Carmichael, &c. where sarsaparilla seemed beneficial, the patients had previously taken more

* On the Mercurial Disease, page 76.

† Essay on the Venereal Disease, &c. page 48.

mercury than had been necessary, and it is probable that any other mild diluent, such as that prescribed in military hospitals, would have been equally efficacious.—Diluents, under such circumstances, operate chiefly by lessening the inflammatory tendency, and partly also, perhaps, by altering the peculiar state of the blood, occasioned by the use of mercury.

In the original MSS. sent to press, a fifth conclusion was inserted, objecting very strongly to the farther prosecution of the experiment of trusting, in military hospitals, complaints really Syphilitic, to the unassisted powers of the constitution. But through the favour of a friend, the author has received a copy of a Circular Letter (dated April 2, 1819,) on this subject, addressed by Sir James M'Grigor to the Medical Officers of the army, which renders it unnecessary for him to urge this advice.

From the reports of Mr. Guthrie, Mr. Rose, &c. it appeared that *one in ten* of the soldiers treated by the new method had been liable to secondary symptoms, and that the primary sores had healed more slowly than they usually do where mercury is employed. As the same gen-

tlemen admitted, that only *one in seventy-five* of the patients treated with mercury in military hospitals had been found liable to secondary symptoms, and as the following pages contain certain evidence, that the Syphilitic virus affecting the infant in utero cannot be subdued by the natural powers of the constitution, he felt himself called upon to express in emphatic language his objections to a farther trial of the experiment in question.

He has great pleasure in paying the tribute (small as it is) of his approbation to the liberality of sentiment which pervades Sir J. M'Grigor's circular. It confirms the opinion, with which he had always been impressed, that the integrity and intelligence of British surgeons have invariably been such, as to secure, for the seamen and the soldiers of our fleets and armies, the best medical and surgical assistance which humanity and knowledge can afford.

Some facts are stated in that circular, which are more in favour of the new method than the reports previously published. Thus, *nineteen hundred and forty* patients treated without mercury, no more than *ninety-six*, had secondary

symptoms,—all of these *ninety-six*, but *twelve*, were cured without that mineral, and they all recovered so completely as to continue fit for duty. Whereas of *two thousand eight hundred and twenty-seven* treated with mercury, *fifty-one* had secondary symptoms in a more violent degree than the above ninety-six, and *two* of them were discharged as unfit for service. It is admitted, however, that although the above be the general result, there is a great discrepancy, in respect to the several particulars, in the reports from different regiments.

Had it not been for Sir James M'Grigor's circular, the author should have recalled to the recollection of army surgeons certain facts well known to the profession, of which many cases have been recorded by Mr. J. Hunter, Mr. Abernethy, &c. tending to shew, that the Syphilitic virus, like some other animal poisons, may, in particular constitutions, remain dormant for a considerable time, and afterwards break out with great virulence.—In that circular, there seems, however, to be an illusion to those facts, and therefore the author does not cite instances which have fallen within his own knowledge, where the poison, after having lurked without any apparent

injury to the individual for four or five years, or longer, has at last become suddenly active, seemingly in consequence of exposure to cold, or excessive fatigue, or indulgence in intoxicating liquors.

As he confidently expects, that, if due attention be paid to the directions contained in the circular alluded to, all uncertainty upon the question at issue will cease, among army surgeons, before the end of three years, he does not dwell farther upon this subject.

Whether this prediction be verified or not, he takes the liberty, with great earnestness, to enter his most solemn protest against the introduction of this experiment (of treating Syphilis without mercury) into private practice.—Patients in the ordinary ranks of society cannot possibly be kept under the same strict regulations and unremitting vigilance of superintendence with soldiers in a military hospital. It would be absurd to expect, that even the majority of persons in the higher stations would submit to confinement to bed, perfect quiet, and vegetable diet, for any length of time. Nay, upon the supposition that many were to acquiesce in such privations, and that in

consequence the Syphilitic symptoms were to cease, it is little probable that such persons would apply for medical advice on the immediate appearance of secondary symptoms. But any delay in doing so might be most fatal, of which medical records bear ample testimony ; and as there is a chance that *one in ten* may have secondary symptoms, it is not too much to fear, that, before long, many melancholy victims of this ill-fated experiment might appear to execrate the experimenters.

It has indeed been alleged, particularly by Mr. Rose, (Medical Chirurgical Transactions, vol. 8, page 425) that the affections of the bones, &c. which were so common, and so much dreaded, both by patients and practitioners, in former times, were the effects of mercury, and not of Syphilis. But all this is contradicted by the description of the ravages of that disease when first noticed, and before the use of mercury was resorted to, and by the testimony of Dr. Fergusson and of Mr. Guthrie, that at present in Portugal (where no mercury is employed) there are numerous individuals of all ranks with mutilated noses, and other personal defects, from the disease in question ; and also by the fact, already

specified, that in India, where such long continued courses of mercury are prescribed for affections of the liver, no disease of the bones, excepting the teeth and alveolar processes, was ever known to occur under such circumstances.—This is perfectly consistent with what has been already explained*, that under peculiar circumstances, the use of mercury aggravates greatly any tendency to caries or ulceration, whether that proceed from scrofula or Syphilis—but in such cases it does so, by inducing the inflammatory diathesis ; and exposure to cold, irregularities in diet, and other causes of inflammation, have the same effect, as is so notoriously shewn in the disfigured visages of many of the inhabitants of Portugal.

That the secondary symptoms have proved milder in military hospitals, where the new mode of treatment has been pursued, can be satisfactorily explained on the same principle, (already so repeatedly stated in these pages), viz. that as such symptoms are invariably aggravated by whatever tends to increase the inflammatory diathesis, the low diet to which the soldiers are re-

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* Page 19.

stricted, and the other precautions adopted in military hospitals effectually preclude the possibility of such tendency.

A solemn protest against any attempt at curing complaints which are really Syphilitic, in private practice, without the use of mercury, founded on these obvious reasons, may be treated with levity by those who find it inconvenient to submit to a course of that mineral, and also by some visionary or inexperienced medical men, and therefore it is necessary to state another argument, derived from facts which no sophistry can evade, and which it is hoped, will rouse the attention, both of the profession and of the public.

There can be no doubt that the infant in the womb is liable to be infected by the Syphilitic virus, and to be destroyed by that poison long before the ordinary period of birth. *Monsieur Bertin, physician to l'Hôpital des Veneriens at Paris, published in the year 1810 an account of the infants affected with Syphilis, who had been under treatment in that hospital, during the preceding nine years.

* Traité de la Maladie Vénérienne par M. Bertin, a Paris, 1810.

The account is truly appalling.—No less than one thousand four hundred and fifty infected infants had been attended within that short space of time.—Of these, one thousand and eighty-five had been born either in that hospital or in l'Hospice de la Maternitè, and therefore had been infected by their parents, and three hundred and sixty-five were brought in from the city or country, many of whom had had the disease from nurses. Monsieur Bertin had adduced numberless proofs, that the infants in whom the disease appeared soon after birth, infected the nurses, and that these communicated the disease to their husbands.

This fact is of the utmost importance in elucidating the progress and the cure of Syphilis, and is so well established, that it would be a work of supererogation to adduce the proofs on which it is assumed. It cannot possibly be urged as any objection against it, that medical men of great eminence have differed materially from each other in the explanation of the precise mode through which the infant in utero is infected by this poison, although it certainly evinces the importance of drawing a line of distinction between the ob-

servations and the inferences or speculations of physicians.

Mr. John Hunter, for example, supposed that the only way in which the infant could be affected by the Syphilitic virus, is by contact with the diseased parts of the mother. Were it necessary to state any additional evidence to that brought forward by Mr. Benjamin Bell (page 416 *et seq.* of his second Volume) of the fallacy of this opinion, the author could cite many cases which have fallen under his own observation—but he contents himself with recording the two following, as being, he apprehends, perfectly conclusive.

A married lady, after bearing three or four healthy children, was delivered of an infant, which at birth had its nates, &c. covered with copper coloured blotches. As this lady had never had any Syphilitic complaint, and her husband and she were of the most respectable rank and character, it was necessary to proceed with great caution in giving any opinion on the nature of the appearances, and therefore the author requested a meeting with the family medical attendant. On seeing the infant, that practitioner immediately recollected, that he had been consulted

by the male parent, about a year before, on account of an ugly eruption on his skin, which was attributed to the heat of the weather, and which had seemed to yield to the use of bark, &c. He was now however convinced, that the gentleman (who had been absent from his wife for several months previous to that time) had had some Syphilitic complaint, for which he had been secretly taking mercury. The infant was eventually cured, but it required the appropriate remedy for many months.

The other case may appear still more decisive against Mr. Hunter's hypothesis. The mother of a numerous family of healthy children became diseased through the profligacy of her husband, and at the same time fell with child. A number of chancres formed on the external parts, which, notwithstanding the irregular use of mercury, continued till the time of delivery. The labour proved preternatural, and the infant's arm was actually protruded for seven hours before the assistance of the author of these pages was requested. The infant was born alive, and a few days after birth had its nates and soles of the feet covered with copper coloured blotches. The disease proceeded in the ordinary way, and the in-

fant's life was protracted for several months, in consequence of the strength of its constitution, and of the occasional though irregular exhibition of mercurial medicines. Scabby incrustations broke out upon the lower extremities and upon the face and head, but no affection whatever appeared upon the arm which had been in contact with the diseased part of the parent.

That the male parent, although apparently in health, and while the female parent is totally free from disease, may infect the infant, Mr. Benjamin Bell has taken particular pains to prove* ; and he has stated several cases in illustration, some of which fell also under the notice of the late Dr. Alexander Hamilton, and of the author of these pages.—The concurrent observations of many other practitioners warrant the conclusion, that in married persons the Syphilitic virus may lurk for a considerable time in the habit of the male, without at all affecting his health, and without communicating any disease to the female, and may nevertheless infect the offspring of the parties.

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* Vol. 2. page 416 *et seq.*

A late practitioner in this city, acquired the reputation of curing the disorders alluded to, with more rapidity and less severity than the rest of his brethren. His method was to apply caustic very liberally to the primary sores, and to give a few mercurial pills, without subjecting the sufferer to any other restriction than abstinence from intoxicating liquors. But many of the patients of that gentleman had the mortification to discover after marriage, that their cure had not been quite so perfect as it had been expeditious. Their wives repeatedly miscarried of dead infants.

In several cases where that gentleman had attended, the author of these pages ascertained that three, four, or five years elapsed between the disappearance of all Syphilitic complaints (together with the possible chance of infection) and the marriage of the individual, notwithstanding which a succession of still-born infants had followed the connection.

It is equally certain, that the disease may be transmitted from the female parent.—Accordingly it is well known, that numerous instances have occurred in public hospitals as well as in private

practice, where women affected with lues have been delivered of dead children, evidently destroyed by the Syphilitic virus.

Where both male and female parents have had the affection in question, and, though apparently cured, have had a diseased offspring, it is difficult to trace the source of the infection; but there is every reason, from the cases which the author has witnessed, to believe that the poison, under such circumstances, lurks in the system of the male.

Cases of congenite Syphilis obviously afford the most ample opportunities of ascertaining both the natural powers of the constitution, and also the efficacy of mercury, in overcoming the effects of that disease.

In fact, the embryo infected with the Syphilitic virus, enclosed in the body of a healthy woman, kept constantly in an equable degree of heat, excluded completely from the atmospherical air, and nourished by blood not formed by its own digestion, must be admitted to enjoy at least as many advantages as soldiers in military hospitals, confined to bed, and fed upon water-gruel.

Experience, however, proves that these advantages are of very little avail to the infected embryo, for it either dies in utero, or is born alive in a diseased state. Under these latter circumstances, the morbid effects of the virus are sometimes evident at birth, and sometimes not till a few days after ; but in both instances the appearances are quite characteristic, and the progress, if left to the resources of nature, is sufficiently uniform.—Copper coloured blotches of a circumscribed form first appear, on the nates and contiguous parts, and soles of the feet, gradually scabbing and ulcerating, and if these are overlooked or misunderstood, ulcerations soon take place in the throat and palate, (with a purulent discharge from the nostrils and eyelids), and scabby incrustations form upon the limbs, accompanied with great debility and emaciation, which more on less quickly destroy life, the nose in many cases sinking previous to death.

In some instances, apparently in consequence of the occasional exhibition of small doses of mercury, the infant thus affected has been known to drag on a miserable existence for several months, in the course of which some of the deciduous teeth have been protruded, and have drop-

ped out.—The ravages of the diseased virus, under those circumstances, are not confined to the infant, for they extend also to the nurse, if very particular precautions be not adopted. Thus, her nipples ulcerate, swellings of the axillary glands follow, and soon after, ulcerations of the throat are discovered, and the general system becomes tainted.

That the Syphilitic virus in infants is of a peculiarly inveterate nature, was the opinion of Mr. Benjamin Bell.—He says, (page 428.) " The virus is in this state of a more deleterious nature, than it ever appears to be in any other form of the disease. Besides being more particularly apt to communicate the infection, it proceeds with more rapidity to destroy the constitution, in so much that if mercury be not employed immediately on the disease being perceived, it usually makes such quick progress, that a fatal termination can scarcely be afterwards prevented."—The extreme delicacy of the infant's constitution is probably the cause of the virulence thus described.

It is established, therefore by innumerable facts, that Syphilis, when a congenite affection in in-

fants, cannot possibly be conquered by the natural powers of the constitution.

To appreciate the full value of this fact, it is necessary to recall to the recollection of the professional reader, that other animal poisons besides that of Syphilis, and also the tendency to various diseases, are communicated to the infant in utero, and that such poisons and diseases do not so regularly prove fatal. The infection of smallpox, for example, has been transmitted from the female parent in many cases, and the infant has been found to have had the disease in a mild degree. Measles and scarlatina, it is more than probable, have been also communicated with impunity to the infant in the womb. If it be urged, that when women in the early months of pregnancy are affected with measles, or smallpox, or scarlatina, in a violent degree, they commonly miscarry, affording presumption that the infant had been destroyed by the disease of the parent, the objection may with great confidence be repelled, for the abortion commonly happens at a period antecedent to that at which the infection could take place,—and besides, the phenomena unequivocally denote, that the miscarriage arises from an in-

ordinate action of the uterus, and not from the previous death of the fœtus.

On the other hand, the efficacy of mercury in curing the infant under all those various circumstances, has been fully ascertained by the experience of every practitioner who has attended to the subject.

Where the male parent alone had formerly had the complaints alluded to, it was the practice of the late Mr. B. Bell, and of Dr. A. Hamilton, to put both parties under a course of mercury; and the result certainly has been uniformly successful, the future progeny of the individuals having been born alive and healthy.

But some cases several years ago occurred to the author, where, from circumstances, it was impossible to adopt this plan, and he was compelled to limit the use of mercury to the male parent. He had the satisfaction of finding the experiment efficacious in the utmost degree, and since then he has always recommended the same treatment wherever he had conclusive evidence that the female parent had never had any suspicious symptoms.

In some cases where the female had repeatedly born dead children, although she herself had never had any Syphilitic complaint, mercury was exhibited to her alone, in consequence of her being pregnant, before the nature of the case was understood.—The effect of the practice in such cases has not been so invariably fortunate as in the former. Some of the infants were still-born, others, though alive at birth, shewed in a few days symptoms of the disease, which soon proved fatal; and a certain proportion were born healthy, or had the complaint in so slight a degree, that it yielded to the appropriate remedies.

Where both parties had had the complaints alluded to after marriage, (cases comparatively rare in this part of the wold), and had been apparently cured, although their offspring were evidently infected, a course of mercury properly conducted has never failed to secure a healthy progeny.—In one case of that kind, which occurred many years ago, (where the late Mr. B. Bell also attended), the mercurial course, by the prejudice of the parties, was not continued for the length of time recommended by the medical attendants. The lady soon after fell with child, and was delivered, between the seventh and

eighth month, of an infant, who infected three healthy nurses in succession. The parties in that case eventually submitted to a proper mercurial course, and afterwards had three healthy infants.

Many other facts might be stated by the author, (as having fallen under his own observation, and concerning which he believes there could be no mistake), to prove, that by means of mercury, the Syphilitic virus lurking in the constitution of one or both parents, and thereby capable of infecting the infant, may be eradicated. And there can be as little doubt, that infants in whom the disease in question is congenite, as well as those infected by nurses, invariably die, as Mr. Bell has remarked, if mercury be not employed; while, on the other hand, a large proportion is saved by that mineral. Thus Monsieur Bertin mentions, that four hundred out of one thousand and sixty-nine of the infants treated in l'Hôpital des Veneriens of Paris, were cured by means of mercury, exhibited either directly to themselves, or mediately through the nurse, and were dismissed, weaned, and in good health, at the end of the year after birth.

Controversies on trifling or speculative subjects have so often employed the time and talents of medical men, without any benefit to science, that it is incumbent on every one who wishes to improve the practice of physic, to abstain scrupulously from such disquisitions. But where the question is one of the highest importance, both to individuals and to the public, such as he apprehends that respecting the cure of Syphilis to be, the author should consider it a most serious dereliction of duty, were he to allow any feelings of deference for the opinions of others, to deter him from expressing strongly his own conviction.

If the facts detailed in the preceding pages, respecting the liability of the infant in the womb to the infection of Syphilis, can be depended upon—and he ventures to assert, without any hazard of contradiction, that they can be neither controverted nor extenuated—the irresistible conclusion must be, that mercury affords the only safe and efficacious remedy for complaints *really Syphilitic.*

While it is not to be inferred that the trials which have been made, to find a safer substitute for that active medicine, have been useless, since

they have suggested many important means, by which its deleterious effects may be guarded against, it is to be hoped, that in this empire any future attempts to cure so alarming a disease as Syphilis by any other medicine than MERCURY, will be regarded with the reprobation they merit.—The trite apophthegm, that in the practice of physic, errors of omission are often of more injurious consequence than errors of commission, applies most correctly in the present instance.*

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* The author's candour and practical good sense, are particularly evinced in the foregoing section. His extreme caution in the use of mercury, in various other diseases, serves to give weight to his testimony in favour of it, as the only safe and certain antidote to syphilis. Fortunately, most of the physicians in this country have been induced to await the result of the great experiment which has been making on this subject, during the last four or five years, by their English brethren. An unbounded confidence in the curative properties of mercury in this disease, and an invincible skepticism, founded on the frequent failure and fatal consequences of every other course of treatment,* (as had been too often shown in the practice of quacks and nostrum-venders), probably caused most physicians to be suspicious of innovation. A few opportunities have occurred to the writer, favourable for the treatment of Syphilis, agreeable to the plan lately pursued by the English and Scotch physicians; but after prosecuting the antiphlogistic course as long as was thought consistent with the safety of the patient, he was in every instance obliged to resort to the use of mercury to cure the primary symptoms of the disease. But whatever else may be the result of the anti-mercurial practice, it will undoubtedly be beneficial in confirming and establishing the observations of Abernethy, Carmichael, and others, that every ulceration on the genitals is not venereal.—I.

* The muriate of Gold forms an exception. This remedy if given during the existence of primary symptoms of Syphilis will no doubt generally exterminate the disease, and in constitutions peculiarly unfavorable to the effects of mercury, it is a highly valuable remedy.

SECTION III.

Of the Cautions necessary during the Use of Mercury.

The first precaution to be adopted in this climate during a course of mercury, is confinement within doors, with a regulated temperature of the apartments.—Both the utility and the necessity of this precaution must be so obvious, from the remarks already made, that it is unnecessary to expatiate upon the subject : not that it is meant that the patient should be confined to an ill-ventilated room ; for, on the contrary, a plentiful supply of fresh air is of essential utility.—While the boldness with which Mr. Pearson exposes such patients to cool, dry, open air, may be well suited to persons who have been immured in a crowded hospital, with a mercurial atmosphere, it certainly would be most prejudicial to the better ranks of society in private practice.

Secondly,—The diet ought to consist of the mildest possible food, such as preparations of milk and farinaceous matters, with weak animal mucilages. In short, all stimulant food, or drink of every description, ought to be most scrupulously refrained from.

Thirdly,—If the individual be robust, sixteen or twenty ounces of blood should be drawn from the arm before any preparation of mercury be exhibited. Where, from the delicacy of the patient, blood-letting cannot be advised, confinement within doors, and low diet, should be persevered in for at least a week previous to beginning the mercury, and during that time one or more doses of cooling physic ought to be taken.

Fourthly,—The mercury must not be given in such quantity, or with such activity, as to produce a sudden effect upon the system. This is certainly one of the most important practical improvements, suggested by Mr. Abernethy and others, and confirmed by the late experiments; for irreparable mischief was often committed by the hurry with which the system was loaded with mercury. If the other precautions be implicitly adopted, the more slowly the mercury is administered, the more certainly, and perhaps speedily, will the primary sores heal.

Fifthly,—Although in particular cases some of the more active mercurial oxydes may be useful, the blue pill or the blue ointment furnish in general the safest and mildest preparations of mercury.

Sixthly,—Salivation is to be guarded against, by lessening the dose, or suspending the medicine, whenever the brassy taste in the mouth is perceived. The same measures are to be pursued if any irritation of the bowels threaten.

Seventhly,—Some vegetable diluent ought to be drank in large quantities, for the purpose principally of preventing the peculiar state of the blood which mercury is so apt to produce. The decoctions of sarsaparilla, guaiac, sassafras, &c. answer this purpose, and perhaps they are all equally efficacious, if drank tepid, and in sufficient quantity.

Eighthly,—It is extremely difficult to establish any general rule for the duration of a mercurial course, as that must be regulated very much by the circumstances of each particular case. From two to three months may perhaps be sufficient in the majority of cases.

Ninthly,—The daily use of the warm bath, where that can be conveniently commanded, is found particularly beneficial.

Tenthly,—If any irritable feelings occur while under the influence of mercury, the use of the medicine should be instantly suspended, and the most active measures for checking the progress of such complaints ought to be carefully adopted. Preparations of camphor, of the spiritus ammoniæ aromaticus, of opium, of cicuta, &c. are severally useful, according to the circumstances of such cases.

Eleventhly,—After the mercurial course is finished, the patient ought to remain within doors for at least a fortnight, improving the diet, (though still abstaining from wine and stimulating liquors), and taking gentle exercise, progressively increasing it according to the return of strength.

Lastly,—The flannel and woollen dress, in which those under a course of mercury should be (literally speaking) encased, is to be changed daily, and besides the ordinary precaution of having those articles of dress well washed, it is necessary that they be exposed for at least twenty-four hours to the open air, and afterwards to the influence of a large fire, before being again used.

SECTION IV.

On the Means of relieving the morbid Effects of Mercury.

Where a mercurial course has been improperly conducted, or where great debility or irritability has followed the use of that medicine, it is extremely difficult to restore health.—Mr. John Hunter seems to have depended principally upon country air and cold bathing; while Mr. Abernethy, Mr. Mathias, Mr. Pearson, and others, place great confidence in preparations of sarsaparilla, of cicuta, of the nitric or nitrous acid, with country air, and generous diet. Dr. Carmichael has, in addition to these means, employed with great advantage antimonial preparations.

From the experience of these and other respectable practitioners, it appears, that the sarsaparilla, the cicuta, and the tartrite of antimony, are chiefly useful in cases of cutaneous affections, or of ulceration of the throat, or of thickening of the periosteum, which is exactly what might be expected on the principles already explained in these pages.—On the supposition that all those consequences of mercury arise chiefly from the

peculiar change upon the state of the blood, medicines calculated to counteract that condition must be the best adapted to the removal of such complaints. The preparations of opium and of cicuta serve the purpose of relieving pain, and allaying inordinate action in particular parts. The nitric, or nitrous acid, tends also to improve digestion.

But many cases occur in real practice, where these several means prove of little avail in arresting the progress of the nervous complaints, or in allaying the irritations of the stomach and bowels, which occasionally follow a course of mercury ; and every practitioner of extensive experience must admit, that such cases are among the most embarrassing and troublesome modifications of disease which are met with. The unhappy prepossessions of the patient under such circumstances add not a little to the difficulty of the cure, as it is almost impossible to command the confidence of such persons, without stooping to artifices, which no man of integrity can submit to.

It should however be universally known, that in cases of that description a great deal may be done by the regulation of the diet and of the ex-

ercise of the body and mind, and by the occasional exhibition of some of the vegetable tonics, provided time be allowed ; for several months at least are always required before any material change in the constitution can be effected.—According to the state of convalescence, swinging, riding on horseback, and the use of the cold bath, are severally extremely useful. In very young subjects, dry friction, and the internal use of preparations of iron, seem to have the happiest effects.

SECTION V.

On the Use of Mercury in Diseases of the Liver.

Inflammation and infarction of the liver it has been long known occur frequently in hot climates, both as idiopathic and symptomatic affections, for they follow almost every disease of the system,—and experience has fully established the efficacy of mercury in arresting their progress. The violence of the symptoms, and the rapidity of their succession in many of those cases in tropical regions, have necessarily led to the most active modes of exhibiting mercury, the life of the patient seeming to depend upon the

celerity with which the system can be subjected to the influence of that mineral. Accordingly, immense quantities of calomel, and extensive mercurial friction, are prescribed with great advantage in the East and West Indies in such diseases.

But in Great Britain, the change of structure of the liver, which eventually ends in suppuration or scirrhosity, is found to arise only from mismanaged intermittents, or from scrofula, or from the abuse of intoxicating liquors. Enlargement of that part, however, is the effect of other causes, viz. tubercles, hydatids, and what are called tubera.

As it is not intended in these pages to investigate minutely the various diseases of that important viscus, it is sufficient for the purpose of this publication, to state, that in the living subject it has been found extremely difficult to distinguish the different alterations of texture, which take place even in cases where the progess of the disease is so far advanced that the patient is almost moribund.

From inattention to this well established fact, it has been too generally supposed, that when en-

largement of the liver can be recognised by careful examination, it is warrantable to prescribe mercurial medicines, unless the circumstances of the case unequivocally denote that the disease is beyond human reach, in consequence of a change of texture, which no efforts of the constitution can conquer. But the proofs of this mortal alteration in any individual case are extremely doubtful.

Of this Dr. Farre has recorded a most striking example, in the instance of a lady, in whom the enlargement of the liver, from innumerable tubera, was such, that on dissection, the diseased viscus was found to have descended as low as the pelvis.----Dr. Farre says, (page 30) that* "She was examined this day by an old physician, who gave it as his opinion, that mercury was the fit and only remedy.----Another medical gentleman, who did not see her, but merely heard that she had an enlarged liver, sent to assure her husband, that, in such a case, mercury was the sheet anchor."

These facts explain what has been long acknowledged by every candid practitioner, that

* Morbid Anatomy of the Liver, by J. R. Farre, M. D.

no mode of practice is successful, even in the majority of cases of enlarged or indurated liver. Where, indeed, the induration has succeeded to a protracted intermittent, there is always a better chance of recovery, than where it has been occasioned by scrofula, or by the abuse of intoxicating liquors, because in these latter cases there is often some complication, arising from diseased changes in the stomach or bowels, or other parts concerned in digestion.

The ordinary mode of exhibiting mercury for the cure of chronic hepatitis in this country, not unfrequently hurries on the disease, or, by impairing the constitution, lays the foundation for paralytic affections, and it may be truly affirmed, that it thus often shortens life. As there are several cases on public record which justify this remark, the author need scarcely offer any illustration.—But he cannot refrain from availing himself of the unbiassed testimony of Dr. Farre, whose liberal and scientific researches demand the respect and the imitation of the profession.

* "It is therefore one important use of morbid anatomy, to point out the boundaries beyond

* Loco citato, page 21.

which it is not only unavailing, but injurious for art to interfere, except to diminish suffering. I venture to oppose this truth to the reverse practice, apparently founded on a maxim, that if an organ be subject to many obscure diseases, of which one or more can be cured, but the others are incurable, then all should be treated like the curable disease.

"Patients suffering under the diseases above described, are not, as far as I have observed, benefited by the operation of mercury. Few medical men now attempt to cure by these means tumours, in the restricted sense of the word, at or near the surface of the body; but it is more especially true, that such efforts prove altogether fruitless, when directed to the cure either of the tubera circumscripta or diffusa; for by the time that the most careful examiner can distinguish them, the progress of the disease has been already so considerable, that the mercurial action tends only to exhaust powers, which art will subsequently in vain attempt to restore.

"On a review of the method of treating cases I. III. and IV. it appears that too much was done by ineffectual efforts to cure; but in case II. a

palliative plan, the result of a more correct diagnosis of the disease, was adopted from the commencement of the treatment. Thus medicine effected in this case all that was possible ; it clearly diminished, but did not inflict any suffering. The erythema of the mucous membranes of the mouth and alimentary canal, and the diarrhœa, which probably depended upon it, instead of being hurried on in a distressing degree, were certainly retarded and moderated.----This view of the subject is not derogatory ; for the perfection of medicine consists, not in vain attempts to do more than nature permits, but in promptly and effectually applying its healing powers to those diseases which are curable, and in soothing those which are incurable."

Dr. Pemberton had long ago given an accurate view of this subject----but there is much reason to apprehend that his valuable remarks have been too often disregarded. * He says, " When mercury is exhibited, where the structure of the viscus is not totally destroyed, although another source of irritation may be introduced into the system by this new stimulus, yet this disadvantage

* Pemberton on the Viscera, Second Edition, page 45.

will be more than counterbalanced by the benefit received in the removal of that disorder, under the influence of which the constitution was before labouring from the excitement of the deranged viscus. If, on the contrary, mercury is used where the structure of a viscus is totally destroyed, another source of disturbance is added to the system, without the diminution of any existing evil ; so that, in fact, we subject the constitution to two sources of destruction, and thus the dissolution of the patient is rather accelerated than retarded."

It must therefore be evident, that in certain stages of congestion of the liver, as well as of other viscera, the inflammatory diathesis excited by the use of mercury, instead of removing the congestion, accelerates the diseased changes which had begun.

As it is the object of the author to improve the science of medicine, and not to expose the errors of the individuals who practise it, he avoids mentioning many instances which have fallen under his observation, where patients were pronounced to be labouring under an affection of

the liver upon the most superficial inquiry into the symptoms.*

Every conscientious practitioner will allow, that in many cases the most minute and deliberate investigation is insufficient to decide on the true nature of the case, as is more fully explained in the two following sections----and hence it is of the utmost importance to proceed cautiously in the exhibition of so powerful a medicine as mercury.

Instead, therefore, of directing mercurial ointment to be rubbed upon the side, and at the same time the blue pill or calomel to be taken internally, so as to affect the mouth as soon as possible, and keeping up the soreness of the mouth for many weeks, the prudent practice is to combine the mercurial with antimonial preparations, and with occasional doses of neutral salts in a very dilute form, so as to increase the secretion from the skin and from the kidneys, without

* One old lady, nearly seventy years of age, was actually put upon a severe course of mercury by a physician, who declared that he felt her liver to be enlarged, though the examination was made while she lay on her left side in bed, and without removing her dress, which consisted of a thick flannel shift, besides the ordinary linen one. In this case, however, the liver proved to be quite sound.

at all affecting the mouth or irritating the bowels. Along with these medicines, a diet consisting of weak animal mucilages, and of the lightest farinaceous matter, ought to be advised, and warm clothing, and strict confinement within doors, should be enjoined. The daily use of the warm bath is also to be recommended.

In those violent degrees of chronic hepatitis, where bleedings at the nose or other hæmorrhages attend, or where dropsical symptoms, with foul blotches of the skin, have supervened, there can be little other resource than palliative means, adapted to the sufferings of the individual.

SECTION VI.

Of the Use of Mercury in Affections of the Stomach.

The most common disorder of the stomach, Dyspepsia, resembles in its chief symptoms, viz. want of appetite---sickness---sometimes vomiting ---sudden and transient distention of the stomach --- eructations---heartburn---pain in the epigastric region, and most usually costiveness---several

other affections of the digestive organs ;—and therefore Dr. Cullen has expressly limited the term to cases where the above symptoms occur, independent of any alteration in the structure of the stomach, though he has not specified the means by which this latter circumstance may be ascertained.

In the majority of cases, if there be no perceptible hardness in the region of the stomach, and no pain upon pressure when that is not in a state of distention, it may be assumed that there is no actual change in its organization. But every practitioner must be aware, that the incipient alterations of texture, which eventually terminate in scirrhosity or cancer, cannot be detected by any examination. This fact is perhaps the only plausible, though it cannot be allowed to be a reasonable apology for the use of mercury in stomach complaints.

When the usual symptoms of dyspepsia are attentively considered, it can scarcely be doubted, that they are occasioned by a diseased secretion of the fluids which are mixed with the food in the stomach, and at the same time an unnatural change in the food itself. Thus, retching of

phlegm, the uneasy sense of fulness of the stomach, relieved by fetid or acrid eructations, the acidity setting the teeth on edge, which follows the taking of food, the heartburn, the irregular action of the bowels, and the appearance of what is vomited, either naturally or artificially, unequivocally denote that the gastric liquor (perhaps also the secretion from the œsophagus, and even from the salivary glands) is different from what it should be, and that the food is not subjected to the natural changes essential to digestion.

It would be inconsistent with the object of this work, to explain that all the other symptoms of indigestion are variously modified in different constitutions, according to the susceptibility, natural or acquired, of the several bowels subservient to the conversion of the food into blood.

With a perfect knowledge of these facts, Dr. Cullen attributed dyspepsia to debility of the muscular fibres of the stomach, although even in his time many arguments might have been urged to shew, that the secretions from the blood-vessels and glands of that part depend upon the influence

of the nerves, and not upon the state of the muscular fibres.

Thus, (as Dr. Cullen himself has admitted), passions of the mind, and sympathy with other parts of the body, induce dyspepsia ; and it is not easy to imagine how he could have supposed that such causes could debilitate the muscular fibres of the stomach, when the more obvious explanation surely must have been, that they affect its nerves. All doubts on this subject, however, seem now removed by the interesting experiments of Mr. Brodie, the result of which was communicated to the Royal Society of London, February 10, 1814*.

Although the author certainly deems it to be of considerable importance to determine, whether the diseased secretions which occasion dyspepsia arise from debility of the muscular fibres, or from some affection of the nerves of the stomach, he should have avoided any discussion of the subject, had his intention been merely to object to the use of mercury in that disease ; for it is

* Experiments and Observations on the Influence of the Nerves of the Eighth Pair on the secretions of the stomach, by B. C. Brodie, Esq. F. R. S.

perfectly obvious, that mercurial preparations can be neither safe nor beneficial according to either hypothesis.---Nothing indeed but his own experience could have led him to believe, that in cases of well marked dyspepsia, where there is no evidence of organic affection, a course of mercury could have been prescribed.

In slight cases of indigestion, popular prejudices may perhaps have led practitioners into this error, for within these last twenty years it has been fashionable for patients in the better ranks of society in this empire, to attribute the most usual symptoms of indigestion to a retention of bile, and to suppose that nothing else than calomel or the blue pill can afford them relief.

Hazardous as it always must be for any individual to oppose popular prejudice, it is incumbent on practitioners, in every instance of serious indisposition, to act according to their own deliberate judgment respecting the nature of the case, and not in compliance with the caprice of the patient. If there be evidence that the food has undergone a diseased change in the stomach itself, they ought absolutely to refuse sanctioning the use of mercury.

Those who are subject to occasional fits of dyspepsia, particularly those who have resided in hot climates, are accustomed to appeal to their own personal experience, as directly evincing the great utility of calomel in such complaints. But if those persons could attend impartially to the effects of that medicine, they would find, that its immediate operation is severe, and that it is followed for some time by uncomfortable feelings, and by an unusual susceptibility of derangement of the stomach and bowels. Perhaps, indeed, these very effects of calomel furnish in the majority of cases an antidote to the poison, for they compel the sufferers to adopt restrictions in diet, and other necessary precautions, which the immediate relief that would ensue from the operation of safer medicines might make them suppose to be useless.

Sometimes, it is true, a single dose of calomel seems to remove in a few hours the oppressive feelings produced by indigestion, and this happens from the sudden discharge of the acrid contents of the stomach and duodenum. But a repetition of the same medicine, instead of being equally serviceable, generally aggravates the sufferings, inducing alarming fits of palpitation, or

of faintings, or of such unaccountable feelings as lead to the dread of immediate death.

The author can truly affirm, that in several cases to which he has been called, where patients had been put under a course of mercury for stomach complaints, the irritable feelings described in page 16, were in a much more violent degree than he ever witnessed from the same medicine given in other diseases. Nor is it wonderful that this should happen, since it is well known that one of the most common disorders occasioned by the use of mercury is indigestion.

When symptoms resembling those of dyspepsia arise from organic disease of the stomach, or through sympathy, from tubercles in the lungs, or altered texture of any other part than the liver, it may be much questioned whether any beneficial effects were ever produced by mercury. In almost all the instances of this kind which have fallen under the author's notice, the original affection was hurried on. Scirrhosity of the pylorus has been always considered to be quite incurable ; and tubercles of the lungs, and affections of the mesenteric glands, which seem by sympathy to produce dyspepsia, are as little under the control of medicine.

On this account, the objects to be held in view in the treatment of dyspepsia, where the exciting causes are neither organic diseases nor affections of the mind, should be, to relieve the urgent symptoms, and to restore the healthy condition of the secreted fluids of the stomach.

To fulfil the former of those indications, the old established practice ought to be again resorted to, viz. the use of such emetics and laxatives as shall completely remove the accumulations within the stomach and duodenum. At first a combination of ipecacuan and tartrite of antimony is to be employed, and if a quantity of tough ropy phlegm be ejected, the vomiting should be again excited by means of flour of mustard mixed with warm water, and the same is to be repeated daily, while the tough phlegm appears in what is vomited. It is seldom necessary to prescribe more than five or six of such emetics in succession.

The laxative medicines to be advised after the operation of the first emetic, ought to be calculated to act upon the stomach and duodenum, and therefore should consist of rhubarb combined with magnesia or jalap, or both together, with

some aromatic. After the first dose, if the mustard emetics be not followed by a proper clearance from the bowels, some of the compound extract of colocynth, or some similar preparation, must be exhibited.

To restore the healthy condition of the secreted fluids of the stomach (which is the second indication) may be accomplished by a due regulation of the diet and exercise, and by the use of medicines calculated to induce a new action of the vessels and glands, from which the gastric liquor, and other fluids, commonly mixed with the food in the stomach, proceed.

Animal diet, that is, total abstinence from all vegetable food, has been long known to have a very great influence, not only in altering the state of the secreted fluids of the stomach, &c. but also in relieving the sensation of giddiness, or faintings, or sinking, or violent palpitations of the heart, which are so alarming to dyspeptic patients. Thus under animal diet, the acidity of the stomach, the heartburn, and flatulency, gradually cease, and the natural feelings of health are eventually restored. But these good effects cannot be expected, unless the diet be, in the strict-

est sense of the word, animal food. By this, it is not meant that patients, under such circumstances, should live upon solid meat, for, on the contrary, animal mucilages, in every variety of form, are required in particular constitutions, but not a particle of vegetable matter is admissible.

It cannot be expected that patients can be persuaded to adopt at once so great a change of food, and physicians are under the necesssity of yielding a little to their feelings and prejudices.—On this account a very small proportion of wheaten flour (in the form of ship biscuit), or of boiled rice, must at first be allowed, on condition that every effort be made to relinquish as soon as possible that indulgence.

Invalids are to be encouraged to submit to these privations in diet, by being assured that they are to be only temporary. The late celebrated Dr. Cullen, who fully appreciated the value of this practice, has expressly stated the bad consequences of persevering in it beyond a certain time. He says, "Animal food cannot be continued long without corrupting the state of our blood." As this unlucky expression seems founded upon humoral pathology, although Dr. Cullen, it is well

known, contributed mainly to overturn that system, some practitioners have been led to disregard the important fact which it records, notwithstanding the testimony which every officer in the navy, since the days of Captain Cooke, can bear to its truth.

On land, it is true, a diet consisting of a very undue proportion of animal food, may be persevered in for a much longer time than on board ship, without occasioning scurvy, or other marks of "corruption of the blood."—This may be explained on various principles—but sooner or later, individuals who live on such diet, have either foul blotches on the skin of a very obstinate description, or fall a sacrifice to the first accidental febrile or inflammatory affection, by which they may happen to be seized.

Precise rules applicable to every case cannot possibly be established, but in general, it is seldom necessary to continue the strict animal diet longer than from eight to twelve weeks, though it may be useful to recur to it occasionally, for a week at a time, so long as any tendency to weakness of digestion may continue. In returning to the ordinary diet, prudence suggests that the

change should be made in the most gradual manner. At the same time, it is readily admitted, that, in some constitutions, a larger proportion than usual of animal food may be required to support the necessary exertions of persons engaged in trades or manufactures, &c.—But it will always be found, that in those exceptions, bitters in the form of malt liquor, and vegetable acids, are indulged in, and these unquestionably tend to counteract the bad effects of the animal food.

As it is not the object of the author to explain fully the practice in cases of dyspepsia, he must confine himself to such hints upon the subject as are consistent with his views in this publication. The ordinary rules of avoiding indigestible substances, and of being truly abstemious and temperate, are too well understood to require being insisted on. But there is one restriction in diet of the most essential importance in dyspepsia, and in many other complaints, which requires being particularly pointed out, as it has not hitherto been sufficiently attended to by the profession.

Abstinence from liquids is the restriction alluded to. By this is meant a considerable dimi-

nution of the ordinary proportion of liquids taken by way of food or drink.

Inattention to this restriction counteracts in many cases, both of chronic and of acute diseases, the remedies employed by physicians. Of this the author has been so fully convinced for many years, that he had at one time a serious intention of publishing his thoughts upon the subject. On the present occasion, it is sufficient for him to remark, that in all diseases dependent upon a superabundance of the circulating mass, or upon an increased or diseased secretion of the fluids poured into the alimentary canal, or furnished by mucous membranes, abstinence from liquids to the utmost extent which can be submitted to, will be found essentially necessary to the cure. In dyspeptic complaints, this restriction in diet possesses all the advantages of temporary starvation, without any of its disadvantages. It ought, therefore, to be an invariable rule with all those who have a tendency to indigestion, to confine themselves, as soon as their constitution can bear the change, strictly to an English pint of fluid at the utmost within the twenty-four hours.

On the importance of exercise in the open air it is unnecessary to say much. Those individu-

als who dare not venture out of doors during bad weather, ought to take regular walking exercise in an apartment with the windows open, guarding against cold by a proper adaptation of dress.

Different medicines contribute to restore the healthy secretions of the stomach, &c. such as lime-water, the supercarbonates of soda and potass, the white oxyde of bismuth, the mineral acids,* numerous varieties of bitters, the capsicum, and preparations of iron. By due attention to the nature of the case, and to the effect of remedies, the appropriate medicine in any given in-

*The *nitric Acid* is an article, which in connection with this subject, deserves to be particularly noticed. For some time after its introduction in the East Indies, as a remedy in diseases of the Liver, in Syphilis &c.* it was extolled beyond its merits, but when it was found unable to sustain the character of a catholicon, it was depreciated and almost abandoned. For the last two or three years, however, it appears to have been regaining reputation. It certainly is a medicine of great value, and its efficacy in chronic diseases of the digestive organs, seems to warrant the opinion of its early advocates, that its effects on the human system, are in many respects analogous to mercury. Like mercury, it operates as an alterative or deobstruent, in removing bilious obstructions and correcting morbid secretions; but instead of increasing, like that medicine, irritation and debility, it has the effect of a powerful tonic. In inveterate cases of dyspepsia, connected with a torpid state of the liver and bowels, I have given the Nitric Acid with perfect success, after having failed with every other remedy in common use. It is also singularly useful when combined with laudanum in chronic diarrhœa depending on too great relaxation of the intestines.—I.

* See Duncan's Annals of Medicine, second edition p. 374.

stance are to be selected. In some obstinate cases a very small dose of diluted alcohol an hour or two before breakfast, continued for two or three weeks, has succeeded in restoring the healthy secretions after every other means have failed. But it is obvious, that this practice must be advised with great caution, and should be persevered in no longer than necessity warrants.

Laxative medicines, calculated to act principally upon the great guts, are essentially necessary. The compound extract of colocynth is perhaps the best medicine of this description, and it may be occasionally combined with rhubarb, or resin of jalap, or such other medicines as have an influence upon the stomach and duodenum. Aloes too has a very excellent effect in this respect. The socotrine aloes, so commonly used, is inferior to the hepatic, but it may be persevered in with impunity for a longer time. There is good cause for the popular prejudice againt aloetic medicines, that they are apt to produce hemorrhoids; and even though united with extract of cicuta or hyociamus, they seem to have that effect. Such medicines, therefore, are only to be employed pro re nata; and for an ordinary laxative the

the compound extract of colocynth is much preferable.

In some cases where the dyspepsia seems connected with an undue action of the great guts, the ol. terebenth. rect. combined with ol. ricini, forms the very best temporary laxative which can be prescribed. It not only completely clears the alimentary canal—but also, while it produces unequivocally an increased formation of fæces, sometimes in a wonderful degree, it occasions none of the feelings of exhaustion, which so usually follow the operation of many purgative medicines.

SECTION VII.

Of an Affection of the Duodenum which imitates Chronic Hepatitis.

Where cases of diseased liver prove intractable, it is a common allegation, especially of physicians who have practised in hot climates, that the failure has been occasioned by delaying too long the adoption of active measures.—This may sometimes be true, and yet it is often unavoidable, because in Great Britain the marks of inci-

pient disease of the liver are so extremely obscure, that they may be very readily confounded with the symptoms occasioned by disordered actions of various parts of the alimentary canal.—Thus oppression of the spirits—impaired or capricious appetite—thirst and dry tongue—sallow complexion—an occasional pain in the right hypochondrium, extending to the top of the shoulder—or a sense of weight or dull pain in the right side, increased while lying on the left side—difficult breathing on quick motion—heartburn—flatulency—occasional painful griping after taking food—very irregular state of the bowels, the stools being sometimes scanty, and at other times very copious and acrid—and gradual diminution of the strength and flesh—which are the symptoms most commonly enumerated as characterizing the early stages of chronic hepatitis, have all occurred, singly or conjunctly, in cases where the liver has remained perfectly sound. The same observation may be truly applied to two other symptoms enumerated by Dr. Pemberton, viz. an intermitting pulse, and a sensation of fluttering at the pit of the stomach.

Yellowness of the eyes has been often regarded as a pathognomic sign of diseased liver. But

a slight yellow tinge is perceptible in many chronic affections of the digestive organs; and some cases have occurred, where on dissection the liver was discovered to have been greatly diseased, though there had been no yellowness of the eyes during the patient's life. One instance of this kind is recorded by Morgagni, Epistle XXXVI. Art. 25.---another by Dr. Blackall, page 149.---and another by Dr. Farre, page 33.

Whoever has attentively considered the various modifications of dyspepsia, must have seen many cases where all the above symptoms were evidently produced by that disease. But there is another affection which still more nearly resembles chronic hepatitis, and which, though very particularly described by Sylvius, Hoffman, and others, has been lately not much attended to. The disease seems at first to consist chiefly of a diminished power of the duodenum, so that the food, in passing through it, does not undergo the usual healthy changes; but after a certain continuance of this impaired power, it (the duodenum) becomes so tender, that pain is occasioned, both by its being distended and by its being pressed upon. It is in this stage that it is most apt to be mistaken for hepatitis, and the symptoms of the

two diseases so nearly resemble each other, that it is scarcely possible to discover the diagnostic marks peculiar to each.

Where the symptoms alluded to arise from an affection of the duodenum, Dr. Ferriar supposed that the following circumstances occur.----* "The pain may be felt to change its place a little on the expulsion of wind. The pulse likewise is soft, though very irregular. The secretion of mucus from the schneiderian membrane is interrupted, and sometimes nearly ceases, though the patient feels a frequent inclination to discharge it. He is generally, but not obstinately costive, and subject to torpor and nervous oppression. A slight inflammation of the fauces also attends the disorder, returning once in eight or ten days."---- He remarked too, that before the exacerbation of pain in this disease the urine is of a bright green colour.

Notwithstanding his high respect for the practical discernment of Dr. Ferriar, the author must say, that these marks of distinction are not to be relied upon.----The appearance, and especially

* Ferriar's Medical History, vol. 2, page 28 *et seq.*

the colour of the evacuations from the bowels, have been considered by Mr. Abernethy in his valuable remarks on biliary affections, as affording the best evidence of the true condition of the liver. But the author's experience has led him to a different conclusion; and indeed he has been always inclined to believe that several of the cases detailed by Mr. Abernethy, as instances of affections of the liver, were, in fact, disorders of the duodenum. This supposition is founded, partly on the rapidity with which Mr. Abernethy's cases yielded, and partly on the nature of the means employed, viz. frequent doses of rhubarb, with a very small proportion of the blue pill, for rhubarb seems to exert a special influence upon the stomach and duodenum.*

For these reasons the author has generally placed more dependence on the history of the disease,

* It appears not to be very important to decide, whether Mr. Abernethy or the author be most correct with regard to the seat of the disease described by Mr. Abernethy, for it is agreed that by pursuing the course of treatment pointed out by him, the patient will speedily recover.

Every one who has attentively examined the valuable paper referred to in the text, and tested its practical utility by his own experience, must be too well satisfied with the result not to concede generally to the views of its author. But, at the same time, the injurious and sometimes fatal effects of a full mercurial course in diseased duodenum, to which Dr Hamilton bears testimony in the sequel, p. 99, shows the necessity of great caution where there is danger of confounding the diseases.—I.

than on the presence or absence of any particular symptoms. He admits, however, that it sometimes is impossible to acquire accurate information respecting the previous history, and that the practitioner is then reduced to the necessity of deciding according to the symptoms.

On this principle, in doubtful cases, where, along with lassitude, sallowness of the complexion, occasional sickness, total want of appetite, thirst, irregular state of the bowels, occasional palpitation of the heart, flatulency, frequency or irregularity of pulse, dull pain in the right side, extending to the top of the shoulder, aggravated by pressure, by exercise, or by lying on the left side, and becoming occasionally acute after taking food, with loss of flesh, there be a daily evacuation from the bowels exceeding considerably in the quantity of real fæces the food actually swallowed, the author considers the disease to depend upon the state of the duodenum, if there be no tangible hardness or enlargement of the liver.---- When along with the same symptoms, there is a milky white appearance of the urine, as if it were mixed with chalk, he never has any doubt on the subject, because he has invariably found the duodenum affected under such circumstances, and he

never observed the same appearance of the urine in diseased liver. He owns, that in several cases where the duodenum was certainly affected, that peculiar state of the urine did not attend.

In some of the cases to which he has been called, the practitioner in previous attendance had supposed the fæces to be of a chalky colour, in consequence of having been covered with the urine, and it was necessary to separate the two excretions before the error was acknowledged.---- The expression of the fæces being covered by the urine, is intended to mark the fact, that the fæces in those cases form an adhesive mass on being passed, and therefore are literally covered by the urine discharged at the same time, and not at all mixed with it. In every case hitherto under the author's charge, this relative state of the two evacuations has not been altered by the operation of any variety of purgatives.

The bright green colour of the urine mentioned by Dr. Ferriar, as preceding the exacerbation of pain in affections of the duodenum, has not hitherto fallen under the notice of the author of these pages. In some cases, the pain in the duodenum is characterized by its occurring common-

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ly about an hour after eating, by its being different from that arising from distention of the stomach from flatulence; and by its not being relieved by the expulsion of wind by eructations.

Different opinions have been formed on the nature of those changes in the duodenum which produce symptoms so nearly resembling those of chronic hepatitis. Sylvius attributed them to a fermentation of the bile, and of the secretions from the pancreas and spleen. Hoffman and Ferriar supposed that they are occasioned by a spasmodic state of the duodenum. It seems more probable that there is at first some impaired action of the minute vessels or glands on the internal surface of that second stomach, as it has been truly called, in consequence of which the secretions necessary for the conversion of the food become diseased, and hence an unusual stimulus is formed, which either induces chronic inflammation, or a degree of tenderness approaching to it. Whether this explanation be admitted or not, it must be conceded, that there are insuperable objections against Dr. Ferriar's hypothesis. He has alleged, that there is spasms of the duodenum depending upon acidity in the stomach; but if spasm of the duodenum were produced by acidi-

ty in the stomach, it would be one of the most frequent diseases in crowded cities.----Besides, it could not account for the symptoms. Thus the spasms must be partial or complete. If it be partial, definite symptoms should follow, such as obstruction of the bile, or of the pancreatic juice; and if it be complete, the food could not possibly pass from the duodenum into the rest of the alimentary canal.----On the other hand, the explanation now offered satisfactorily accounts for the symptoms, and seems to be confirmed by the means of cure which experience has proved to be useful.

Individuals who have formerly resided in warm climates, and have suffered from affections of the liver, are particularly liable to this disorder of the duodenum; and from the sympathy existing between all the parts concerned in digestion, it is not unreasonable to suppose that if this disease be neglected in such constitutions, the liver may eventually suffer.

Nature has furnished a most efficacious remedy for the removal of that tendency to diseases of the liver, which is so apt to occur in Europeans who have inhabited hot climates, viz. the mu-

riate of lime, which forms the active ingredient of almost all the natural mineral waters. Thus Cheltenham water has long been known to afford great relief to those invalids who return from India and the West Indies, and there can be no doubt that its chief active ingredient is the muriate of lime.

That in many cases the relief experienced from that mineral water proves merely temporary, is readily admitted. But this is probably owing to some mismanagement in its use. In many cases, for example, it is not continued for a sufficient length of time; in others, due attention is not paid to the clothing, diet, air, and exercise, &c. which in impaired constitutions, are so essential to the restoration of health; and in other cases still, the laxative effect of the Cheltenham water, after a week or two, proves debilitating.

If instead of the Cheltenham water, the muriate of lime be taken in doses adapted to the constitution of the patient, and be steadily persevered in, there can be no risk of disappointment; for it may be continued for many months, not only with perfect safety, but also without any inconvenience or restriction whatever, and it may

be combined with diluents, and occasionally with neutral salts, and with preparations of antimony or of iron, according to the circumstances of the individual cases. But as this medicine produces no sensible operation, unless when exhibited in disproportionate doses, and acts slowly and imperceptibly, so that no rapid amendment follows its use, it is not wonderful that the impatience and the prejudices which so commonly attend a broken state of health, make invalids apt to become tired of it.

When mercury is prescribed in this disorder of the duodenum on the supposition that the liver is diseased, fatal event sometimes takes place with unusual celerity; coffee coloured vomiting, with excruciating pain in the region of the stomach, followed by delirium, suddenly supervening. In the majority of cases, however, there is only such a considerable aggravation of the symptoms, as to render it necessary to suspend the course of mercury, and to employ palliative means.

Professor Burns of Glasgow, (on whose veracity and practical acumen it is unnecessary to expatiate), mentioned some time ago in a private

communication to the author, that the use of the nitro-muriatic-acid bath has a tendency sometimes to excite a discharge of blood from the coats of the stomach, inducing vomiting of a fluid something like hare-soup, mixed with dark coagula, which the patient and attendants suppose to be vitiated bile, and do not consider to be dangerous, although death invariably follows in a short time.---In the instances of this kind which have fallen under Mr. Burns's notice, the acid bath had not been employed with his sanction; and from what has been already stated, there is a probability that the original disease, in most of those cases, had been the affection of the duodenum alluded to, and not a disease of the liver.

The nitro-muriatic-acid bath exerts a powerful stimulus on every part of the alimentary canal, and when prudently employed, is most useful in particular complications of disorder; but whereever there is a tendency to inflammation in any of the chylopoetic viscera, it cannot fail to aggravate the symptoms.

For the cure of this disorder of the duodenum different means are required, according to its progress. In slight cases, repeated doses of rhu-

barb, combined with magnesia or other laxatives, and a course of the white oxyde of bismuth, with mild food, are generally sufficient. But in the more violent degrees, it is necessary to begin with the application of leeches to the epigastric region, after which one or more antimonial emetics must be directed, and nauseating doses of the same, with occasional laxatives, ought to be continued for some time, the patient being kept all the while upon the lowest possible diet, with respect both to the quality and the quantity of the food. After the urgent symptom have yielded, the same mode of diet as that recommended for the cure of dyspeptic complaints ought to be adopted, and the white oxyde of bismuth combined with some aromatic, is to be advised.

SECTION VIII.

Of Affections of the Pancreas and Spleen.

During the late war the various modifications of fever to which the British troops were exposed from insalubrious climates, fatiguing duties, and the deprivations incident to a state of active warfare, were very frequently followed by enlargement of the spleen, and perhaps of the pan-

creas, as well as of the liver; and hence the symptoms of diseases of the spleen became familiar to the army surgeons.

These are, in the incipient stage, a peculiar clearness of the eyes, with a particular expression of the countenance, and a pain in the left side, increasing on taking a deep inspiration, or when pressed upon,----together with an inability to lie in any other posture than on the left side. As the disease increases, fulness of the left hypochondre, sensible enlargement of the spleen itself, difficulty of breathing, in many instances vomiting of blood, and dropsical symptoms, succeed. The marks of an affection of the pancreas are not so characteristic.

It has been a prevalent opinion among the majority of the medical officers of the British army, that mercury furnishes the only cure for those affections of the spleen and pancreas.--And it consists with the author's knowledge, that many of the individuals who had suffered from the ill-fated Walcheren expedition, were subjected, on their return home, to repeated and severe courses of that medicine. An impartial consideration, however, of those cases has impressed on

him the conviction, that safer means would have been more efficacious; and he is confirmed in this opinion by the fact, that in several instances where mercury failed, a course of Cheltenham water was supposed to have prove successful.

In those affections of the spleen or pancreas which follow remittent or intermittent fevers, it seems therefore probable that a continued course of the supertartrite of potass, or of the muriate of lime, combined with antimonials, with a proper regulation of the diet, would be both a safe and a beneficial mode of practice.

SECTION IX.

Of the Use of Mercury in Affections of the Intestinal Canal.

Preparations of mercury having a tendency to excite diarrhœa, it seems very natural to employ them for the cure of habitual constipation; and there can be no doubt, that on many occasions a course of the blue pill, with a due regulation of the diet, has restored the healthy actions of the bowels. This may be conceded, without admitting in its full extent the accuracy of Mr.

Carlisle's eulogium upon the powers of that preparation of mercury.

"It," he says, "seems to have no intrinsic purgative quality, but to act indirectly by exciting the flow of that natural intestinal stimulus the bile. It seldom induces a watery or exhausting catharsis; given in doses of five grains to adults for three successive nights, or alternate nights, it usually induces a copious flow of the bile, and a large and well conditioned evacuation of the bowels. It does not seem to impair the digestion; and the natural stimulus which it calls forth appears to cleanse the whole alimentary tube, without leaving a propensity to costiveness. The profession are indebted to Mr. Abernethy for the present general use of this valuable medicine."*

As to the more active chemical preparations of mercury, besides promoting the speedy flow of bile, they augment greatly the secretions naturally poured into the alimentary canal. But it is not merely by the addition to the bulk or

* Professor Carlisle on the Use of Cathartics.—London Medical Repository, Vol. I. page 187.

fluidity of the contents of the intestines, that the peristaltic motion is accelerated, for there is certain evidence, that in proportion as the secreted fluids in question are abundant, they become acrimonious. From this acrimony, the intestinal fibres are violently irritated, and hence excessive griping is not unfrequently induced, and often also bloody dejections ensue. Some of the mercurial oxydes (as the muriate) act so powerfully on the villous coat of the stomach and bowels, as to occasion inflammation, with all its consequences.

The chemical preparations most generally in use as a purgative in this country is the Calomel.—"It has," as Mr. Carlisle has remarked, "a direct purgative power, as a metallic salt; and it operates powerfully on the large intestines.—It disorders the digestive powers of the stomach; and, in debilitated persons, the frequent employment of it sinks the strength, and provokes hæmorrhoids."

From what has been stated in the preceding pages, respecting the injurious effects of all the preparations of mercury, and especially of calomel, upon some constitutions, and the impossibil-

ity of distinguishing those individuals to whom that mineral, in every form, is apt to prove noxious, it must be evident that no physician can calculate, with any degree of certainty, on the safe operation of mercurial purgatives, unless in cases where the experiment has been already tried.

When, on the other hand, habitual torpor of the bowels, is owing to a deficiency of bile, or to some unusual state of the mucous and other secretions of the intestinal tube, it is unquestionable that there are many medicines which can remedy those defects with more safety than mercury. For example, preparations of antimony and of rhubarb both stimulate the biliary system, and increase the secretions from the stomach and intestines, and magnesia and gamboge, and innumerable neutral salts, produce the latter effect; and therefore, by a proper combination of different medicines, all the advantages of mercurial purgatives may be obtained, without incurring any of the hazards.—In short, whether it be required to promote the flow of bile, or to increase the secretion of the fluids furnished by the stomach and intestines, or to excite the peristaltic action of these latter, it is possible to select medicine

which shall definitively produce those effects, without injuring in any way the general habit.—Whereas no preparation of mercury can be administered without the risk of some consequences ensuing, which could neither be intended nor expected.

By these remarks, the author does not mean to allege, that there are no cases whatever, in which the blue pill or calomel ought to be employed for the purpose of opening the bowels, but he has strong objections to the frequent and indiscriminate use of such powerful and dangerous means. No prudent traveller would climb a precipice, if he had a sure road along the foot of the mountain. The general rule ought undoubtedly to be, to avoid prescribing any preparation of mercury as a purgative, wherever safer means can be relied on.

Daily experience may perhaps be urged against this rule ; for it may be alleged, that in every complaint of infancy and childhood, calomel, within these few years, has been had recourse to, not only by practitioners, but by parents and nurses ; a practice which must have long ago been exploded, if bad effects had ensued.

This argument, when duly examined, will be found more specious than valid.—The operations of many medicines, and particularly of metallic oxydes, are not easily ascertained, even by professional men, and far less can they be traced by ordinary observers. Although a dose of calomel may seem merely to affect the stomach or bowels, it may by its influence upon some latent disorder, such as tubercles in the lungs, or slight enlargements of the mesenteric or other internal glands, give activity to a disease, the source of which might otherwise have been removed by the natural powers of the constitution. The author has for several years been impressed with the conviction of this important truth.

That there are many individuals who have often with impunity taken calomel as a purgative, is not to be denied ; but it is equally true, that extreme irritability of the stomach and bowels, ulcerations of the mouth with caries of the teeth, dropsy, epilepsy, and various other modifications of disease, have followed the use of that preparation. In several cases the author has decidedly ascertained, that ulcerations of the villous coat of the intestines in infants and young children, have been induced by the frequent repetition of doses of that medicine.

Had these injurious effects of calomel upon delicate constitutions been hid from the rest of the profession, and known only to the author, some apology might be offered for the pertinacity with which that medicine is still prescribed—but so far is this from being true, that it may be confidently asserted, that no medical man of competent knowledge and observation could administer calomel as a purgative, in a hundred instances, without being convinced of its injurious tendency. Of this, innumerable proofs could be cited, but it is sufficient to appeal to the testimony of Professor Carlisle and of Dr. Blackall.

Mr. Carlisle has expressed himself very strongly on this subject.—"That grave men should violently persist in directing large doses of calomel, (and I consider any dose above four grains to be large,) and order these doses to be daily reiterated in chronic and debilitated cases, is passing strange.----Men, starting into the exercise of the medical profession from a cloistered study of books, and from abstract speculations----men, wholly unaware of the fallibility of medical evidence, and unversed in the doubtful effects of medicines—may be themselves deluded, and delude others for a time ; but when experience has

proved their errors, it would be magnanimous, and yet no more than just, to renounce both the opinion and the practice."*

Dr. Blackall's remarks being more specific, afford a still more satisfactory proof of the validity of the author's opinions.—"It appears to me," he says, "that no accidents proper to the disease can account for all those fatal conversions to the head, which of late years have so frequently taken place in the fevers of children; and I have on some occasions been disposed to attribute them to excessive and repeated doses of calomel, which either not moving the bowels, as was expected, have given evidence of being absorbed, or, on the other hand, have purged too violently, and been succeeded by diarrhœa without bile, and a prostration of strength, from which the little patient has never risen. Its less severe effects are sometimes of no slight importance: a slow and imperfect recovery, a languid feverish habit, and a disposition to scrofula.

"It need not surprise us, that, in children, this disposition, particularly if so excited, should of-

* Loco citato, p. 187.

ten fall on the part most liable to every impression, and most actively developing itself, the brain ; since, even in adults, mercury is inimical to the nervous system. Parents have something to regret, who are so perpetually giving calomel to their children, without any distinction or care, as a common domestic remedy. And it is difficult to conceive on what view of the subject even practitioners proceed, who indulge in its use with less scruple than ever, with less caution as to management, whilst they are observing and lamenting the daily increasing ravages of hereditary scrofulous disorders. It can hardly be in the present day from want of calomel, that such a taint is propagated."*

The facility with which calomel can be exhibited to patients who are reluctant to take whatever has the semblance of a drug, is probably the chief motive for this unfortunate prejudice in favour of so hazardous a remedy.—In reprobating, as he strenuously does, this sacrifice of conscience to convenience, the author does not deem it necessary to shew the importance of teaching individuals, at the most early period of life, to ac-

* Blackall on Dropsies, page 248. *et seq.*

quire the habit of readily swallowing drugs, though he must remark by the by, that he annually sees many melancholy instances of the fatal consequences of inattention to so obvious a maxim. It is because he knows that there are several tasteless medicines which are equally efficacious with calomel, and are at the same time perfectly definite in their operation and safe in their effects, that he blames the practice. Some of those medicines have been already hinted at, and are now to be considered more particularly.

One of the most powerful certainly is the tartrite of antimony. In solution, its good effects are nearly the same as those of calomel, and it can be exhibited with perhaps still greater facility, because it may be mixed, without exciting suspicion, with any of the ordinary drinks. It is not indeed pretended that this medicine is perfectly harmless in its operation—on the contrary, it may be truly said to be *poisonous* if not administered cautiously—but it may be as certainly affirmed, that proper precautions ensure the absolute safety of its effects.

Orfila's experiments have most satisfactorily elucidated this point. He ascertained unequivo-

cally, that the injurious effects are invariably proportionate to the strength of the solution of that medicine. Thus, he found, that four grains of the tartrite of antimony dissolved in an ounce of water, and received into an empty stomach, produced most deleterious effects ; whereas the same four grains, dissolved in a pound of water, or although dissolved only in an ounce, swallowed when the stomach was full of fluid, excited no dangerous symptoms.

In prescribing, therefore, this medicine, it is only necessary to take care that it be given in the form of a very weak solution, and while the stomach is not empty.—On this account, perhaps no larger dose than a tenth or an eighth of a grain ought ever to be administered at once to a young subject, and attention is to be paid, that at the time this dose is exhibited, the stomach contain at least several ounces of fluid.

With these precautions, this medicine will be found, not only to evacuate any offensive matter contained in the alimentary canal, but also to promote all the ordinary secretions of the chylopoetic viscera, without the hazard of eventual bad consequences.

One obvious objection may be urged against this medicine, viz. that if these precautions be indispensible, its operation must in some cases be too slow to be beneficial. The force of this objection must indeed appear very striking to those who have been accustomed to the extensive employment of calomel, the agency of which is often so rapid ; and if there were no medicine that could assist with safety the tartrite of antimony, it would be unanswerable. But whenever there is occasion for the speedy action of a purgative, the gamboge, which is devoid both of smell and of taste, can with the utmost facility be employed as an auxiliary to the antimonial preparation.

These remarks apply to cases where the object of the purgative medicine is to promote the flow of bile, or to increase the secretions of the alimentary canal, but there is an infinite number of complaints in which all that is required from purgatives is to expel the contents of some portion of the intestines. Even in such instances, a solution of the tartrite of antimony greatly assists other medicines, and renders a very small dose of them extremely efficacious. Thus, a few grains of rhubarb, or of jalap, if preceded by the solution in question, quickly empty the duo-

denum and small guts, while cold drawn castor oil, the compound extract of colocynth, preparations of senna, &c. excite the action of the large intestines.

Magnesia, and the different neutral salts, which are so useful as purgatives in febrile and inflammatory disorders, can, in the same way, be combined with the antimonial solution, and with the gamboge,—and it may with perfect confidence be asserted, that a safe substitute for calomel can be selected in nine tenths of the cases in which that mercurial oxyde is now prescribed.

Every physician knows that some medicines produce different, and even opposite effects, according to the quantity exhibited as a dose.—For example, in certain affections of the bowels, twenty grains of ipecacuan given at once, excite full vomiting ; but if the same twenty grains be divided into forty pills, and one of them be administered every half hour, till the whole be taken, neither nausea nor sickness follow, while in general the irritation in the bowels is allayed.—Perhaps a still more striking illustration of the same fact is afforded by the muriate of lime.—Half a drachm of the ordinary solution of that salt, mix-

sed with eight or ten ounces of water, agreeably sweetened, may be taken twice a-day, for a great length of time, without producing any immediately sensible operation, and in most instances, with an obvious improvement of the general health.—But if three or four drachms of the same solution be given as a dose, a most violent and debilitating diarrhœa is commonly excited ; and if the same dose be persevered in for even a few days, the most alarming emaciation speedily follows.

It has therefore been supposed that small doses of calomel may check looseness, although large ones would certainly increase it, and with this view, such means have been recommended, both in the bilious diarrhœa of adults, and in the green scour of young children. Thus Dr. Clarke of Dublin has advised, in these latter cases, half a grain of calomel to be given every night, as a dose to an infant.

But it has always appeared to the author, that wherever looseness is accompanied with an increased flow, or any unusual acrimony of the bile or of the intestinal secretions, evinced by the appearance of the stools, which are bilious, or acrid

and watery, or slimy, or bloody, or dark coloured and offensive, preparations of mercury, however small the dose may be, add greatly to the irritation, unless they happen to pass unchanged through the alimentary canal. As he has been called in to several cases where young children had most obstinate and violent diarrhœa in consequence of mercurial friction, and as he has repeatedly seen ulcerations on the surface of the colon, where small doses of calomel had been employed for a considerable time in order to moderate habitual diarrhœa in infants, he has been led to suspect, that upon many occasions, in very young subjects, the calomel, from being involved in the contents of the stomach and bowels, or from some other cause, does not act at all as medicine.

Should this be admitted, a ready explanation is afforded of the impunity with which in many instances calomel is administered ; and on the same hypothesis, it may be understood, that small doses of calomel may seem useful in bowel complaints, when in reality the amendment is to be attributed to the regulation of diet, and to the opiates which are commonly recommended at the same time.

According to the author's experience, in common with that of many other practitioners with whom he has consulted on those affections, the safe mode of practice, in all cases where there is an increased flow, or an unusual acrimony of the bile, or of the fluids naturally poured into the intestinal tube, is to pursue such measures as shall allay irritation, and at the same time lessen the quantity and the acrimony of the increased secretion.--Diluents--the testacea---occasional opiates, combined with ipecacuan---mild preparations of neutral salts---gum-arabic, and various other means, may with great propriety and advantage be employed for those purposes.—At any rate, he can confidently declare, that he has seen a number of infants, and very young children, destroyed, as he positively apprehends, by the indiscriminate use of calomel for complaints of the bowels.

There is however, one variety of diarrhœa, common both to adults and to children, in which preparations of mercury appear to give relief more speedily and more certainly than any other medicines.—It usually supervenes to cases of protracted indisposition, and is characterized by the fæces being very liquid, and of a light clay

colour, with a most offensive smell, and by the extreme debility which attends.

This variety of diarrhœa seems to be owing partly to some irregular action of the liver, and partly to some unusual state of the great guts. That the functions of the liver are interrupted, is presumed by the diminished quantity of bile in the stools, and that there is some unusual state of the great guts, is proved by there being no solid fæces discharged. It may be that the duodenum and other small intestines are also disordered; for it is not easy to explain the emaciation and the debility on any other supposition.

Probably the alteration in the state of the great guts is rather in the secretion from their internal surface than in any change of texture, not only because the disease very often yields to medicines, but also because in fatal cases the whole tract of those intestines has been found in a healthy condition in respect to structure, although quite empty of any thing like solid fæces.

From his reluctance to employ mercurial preparations, the author at one time tried a number of different remedies for the cure of this disor-

der ; but he is from attentive observation convinced, that small doses of some of the mildest preparations of mercury, such as the blue pill, combined with opium with or without ipecacuan, are singularly efficacious in such cases. Those medicines are to be repeated every eight or ten hours, or oftener, till healthy stools appear, and are then to be slowly withdrawn, If calomel be preferred to the blue pill, the dose ought never to exceed one grain, even to an adult.

It has long been a popular belief, that mercury in every form is a certain poison for worms in the alimentary canal.—In this work it would be improper to enter at full length into the discussions which have lately prevailed respecting the influence of intestinal worms, in occasioning disorders of the organs of digestion, and through sympathy, of other parts of the system.—But since many intelligent physicians have expressed their conviction, that lumbrici produce none of the injurious effects so vulgarly attributed to them, it is necessary to advert to this opinion, before noticing the safety or efficacy of anthelmintic medicines.

That the tenia and the ascaris excite a specific irritation upon the intestines, has not been deni-

ed by the most sceptical,—probably for the plain reason, that the signs of such irritation are as obvious to the uninitiated as to the most learned member of the profession. But the symptoms supposed to denote the presence of lumbrici are so often the effects of other causes, such as acrimonious collections within the primæ viæ, or irregular actions of some portions of the intestines, that it is often impossible to determine in any given case, whether they arise from the one or the other of those causes.

Another, and perhaps a still more plausible argument in favour of the allegation that lumbrici are not productive of morbid effects, is derived from the fact, that children in perfect health occasionally pass (with their stools) those worms,—and that sometimes the same event happens during the course of some disease, such as measles, or typhus, or smallpox, where it is impossible that lumbrici could be the cause of the disease.—Some American physicians, reasoning on those facts, have even alleged, that intestinal worms, by consuming what is superfluous or acrimonious in the food, may serve some useful purpose in the animal economy.

There are, it must be admitted, only two direct proofs that lumbrici frequently do injury.---The first is, that a worm of that kind has been found, as the author can vouch from his own observation, in the introsuscepted portion of the gut, where fatal event had taken place in consequence of introsusception.---And the other is, that all the distressing symptoms of an alarming indisposition have rapidly ceased after the expulsion of one or more lumbrici.*—Of the negative proofs in favour of this opinion, which are numerous, and the author apprehends conclusive, it is unnecessary in this place to offer any detail —more especially as the means for expelling lumbrici, which he ventures to recommend, cannot be prejudicial, though the symptoms of disordered bowels, &c. should be found to proceed from other causes.

An objection to such apparently harmless means for destroying worms, as drinking water

* The following case shows pretty conclusively that worms may be the source of so much irritation in the intestinal canal, as to cause general and violent disease. A child four or five years old was attacked suddenly with epileptic fits, which continued in quick succession from morning till noon. As the child never had had fits before, they were suspected to be owing to some irritating matter in the intestines. A large dose of calomel was given, which was followed by a discharge of forty lumbrici. The convulsions soon ceased, and never after returned.—I.

in which quicksilver has been boiled, or wearing a belt containing that mineral, may be considered to be fastidious, and yet there is pretty conclusive evidence, that in some instances even those means have proved injurious.—Calomel, however, seems within these few years to be the chief mercurial preparation employed as an anthelmintic.—It forms the active ingredient of every patent medicine for the expulsion of worms, from Waite's gingerbread nuts to Ching's worm lozenges.

Of the efficacy of calomel in poisoning intestinal worms, and in promoting their expulsion, no practitioner can doubt, although, at the same time, the safety of its operation may be very much questioned. Every newspaper has for many years blazoned forth the superiority of Ching's lozenges, and other patent medicines, over the ordinary prescriptions of physicians, probably because the successful cases have alone been recorded, while all the unfortunate ones have been carefully concealed.

This boasted superiority of the patent worm medicines, arises entirely from the doses of calomel, which they contain, being much larger than

those usually prescribed by regular practitioners. The author does not scruple to admit, that his knowledge of this fact led him, at an early period of his professional life, to prescribe greater doses of laxative medicines for infants and children than he had been taught to consider proper.* While he derived this lesson from marking the operation of Ching's lozenges, &c. he had occasion to witness the frequency of very deleterious effects from those medicines, such as convulsions—inflammation of the bowels, and excessive debility, terminating in dropsy.

Mercurial anthelmintics being thus dangerous, it is obvious that their use could only be sanctioned on the principle of necessity, viz. that no other equally efficacious medicines for the expulsion of worms were known.----Fortunately, however, this is not the case, as there are many different articles of the materia medica which possess the same vermifuge power, and are perfectly safe in their operation. Sea salt----the muriate of lime----garlic----the semen santonicum----the chamomile flowers in powder, and several other vegetables, seem to poison lumbrici; and com-

* He has much satisfaction in finding that his practice in this respect is now adopted by the most judicious of the profession.

binations of rhubarb—of senna—of gamboge—and of scammony—and more especially the rectified oil of turpentine mixed with cold drawn castor oil, readily promote their expulsion.—As to ascarides, where stimulant glysters cannot be administered, suitable doses of aloes, followed up (at the distance of ten or twelve hours) by a combination of jalap and senna, seldom fail to dislodge them.

The late celebrated Dr. Parr, on whose practical knowledge the author, from his earliest years, was taught to place the most implicit reliance, and to whose instructions he owes more than he can ever acknowledge, considered the Helleborus fœtidus, or bears-foot, to be the safest and most powerful anthelmintic hitherto discovered. While his respect for the memory of Dr. Parr leads him to mention this, he deems it his duty to add, that he has had no experience of that medicine. The bears-foot, and the Ol. Terebinth. were recommended to his notice about the same time; and having ascertained the safety, and utility, and activity of the latter medicine, (for it has never yet in his practice failed to clear the alimentary canal from every kind of worms), he did not think himself warranted in making experiments with the other medicine.

SECTION X.

On the Use of Mercury in Dropsical Affections.

The indiscriminate use of mercury for the cure of the various modifications of dropsy, which is too well known to require any proof or illustration, is so inconsistent with the opinions respecting the nature of that disease which prevailed in the days of Dr. Cullen, as to lead to the supposition, that within the last thirty years, either a sudden revolution in the laws of the human machine had taken place, or that medical men had ceased to reason on the operations of medicines, and on the varieties of disease. The slightest consideration, indeed, of the several phenomena and exciting causes of dropsy, must satisfy every impartial inquirer, that no single medicine can be useful in every case of that disease.

Such complications occur in general dropsy, that it is extremely difficult to give, within the limits of a work like this, even an outline of the phenomena of the disease. Sometimes it proceeds insidiously and slowly, the patient at first having an impaired appetite for food, feeling listless and languid, being fatigued by slight exertions, having a short dry cough, or a little quick-

ness of breathing on ascending acclivities or walking faster than usual, and looking pale and thin. By and by, swelling of the feet and ancles occurs towards night, and gradually increases, together with an aggravation of all the former symptoms.

On many occasions little attention is paid by the sufferer himself to these circumstances, till the disorder has proceeded thus far; and when an investigation of the symptoms is at last instituted, it is found that, along with want of appetite, there are costiveness, lessened discharge of urine, a feeble irregular pulse, a pasty or sallow complexion, and great dulness of the eyes, and relaxation of the features.---If the anasarca of the lower limbs be considerable, it subsides while in bed, but in the morning the face, and especially one or both eyelids, or one or both hands, are swelled. The surface of the skin does not feel hot, on the contrary, rather cool, especially on the lower extremities.

In the further progress of the disease, the swelling extends over the whole body, the abdomen enlarges, and from the fluctuation which can be perceived, it becomes obvious that an effusion has taken place into the peritonæal sac, and this

is soon followed by increasing debility, breathlessness in the horizontal posture, disturbed sleep, and transient delirium. Previous to death, in some cases erysipelatous inflammation appears on some part of the skin, and advances to sphacelation.----In other cases the breathing grows more and more laborious, and insensibility, with excessive irregularity in the action of the heart, supervenes, succeeded by one or more convulsions, which terminate life.

When anasarca comes on after protracted debilitating disorders of the general system, the symptoms differ very considerably in different cases. If it occur after excessive evacuations, or much loss of blood, the pallidness of the countenance, especially of the lips, is greater than in the former cases, and the impression of the finger on the swelled parts remains longer, but there is not the same want of appetite, and confined state of the bowels.

If scarlatina have preceded the anasarca, the swelling takes place more suddenly than in the former instances ; the surface of the skin feels hotter, and it admits much less readily the impression of the finger ; thirst, and total loss of appe-

tite, and great uneasiness and restlessness, attend. The pulse too is extremely rapid, and a pain in the side or in the head is apt to supervene.—Under such circumstances, cramps of the limbs, or delirium, sometimes suddenly occur, and terminate in violent convulsions.

Irregularities of digestion, with erratic pains, and slight feverishness, are now and then followed by dropsical swellings of the limbs, with a scanty discharge of urine, and great depression of spirits, with excessive debility. In some of those cases bleedings from the nose occasionally happen, and afford temporary relief. Jaundice accompanies the swelling in other cases. Great irregularity and inequality of pulse are commonly evident in such instances.

Many other complications of ailments are met with which end in general dropsy ; so that although there is no difficulty whatever in distinguishing the disease when it actually exists, it is not easy in many cases to foresee its approach.

Notwithstanding the variety in the symptoms of general dropsy, the several modifications of that disease may be divided into two kinds—

those in which the urine contains coagulable serum, and those where there is no such unusual change in the state of the urine. This distinction has been suggested by Dr. Wells, and particularly by Dr. Blackall ; and as it lays the foundation for some practical conclusions of the utmost importance, it demands the serious consideration of the profession.

Having been led, by the experiments of Dr. Rollo and Mr. Cruikshank, to subject the urine of dropsical patients to the influence of heat, Dr. Blackall found, that even under the boiling point it contained, in some instances, coagulable serum, in various proportions and of various degrees of firmness, and that in other cases no such coagulable matter could be detected. He also ascertained, that sometimes the red particles of the blood are mixed with coagulable serum in the urine. The utility of this arrangement in illustrating the causes, and in directing the treatment, will appear in the sequel.

No apology need be offered for inquiring into the causes of dropsy, since it must be obvious, that unless the causes of disease can be ascertained, no method of cure can be adapted to the

several cases, except in those very rare instances where chance has made known a specific remedy.

The commonly received opinion, that the collections of watery fluid within the cellular membrane, or within the several cavities which constitute the varieties of dropsy, arise either from an increased discharge from the exhalents, or a diminished absorption by the lymphatics, or a combination of both causes, may be said to be in general correct, and therefore any minute detail in illustration of those causes must be unnecessary.

Increased discharge from the exhalent arteries, (the first of the causes enumerated), has been commonly supposed to be the consequence of a mechanical obstruction to the return of veinous blood, or of such extreme relaxation of all the simple solids, that the thinner parts of the circulating mass may readily transude through the coats of the arteries, and many proofs of both these causes might be enumerated. Thus, induration of the liver compressing the principal branches of the vena portæ, and aneurisms of some of the large arteries, or other tumours contracting the area of large veins, have been seen, on dissection, in dropsical subjects. And where

there is great feebleness of the body, anasarca happens whenever the patient is for any time in such a posture that the blood is prevented from returning to the heart by its own weight.

Another cause, and perhaps not an unfrequent one, is an increased activity of the exhalent arteries occurring independent of any mechanical obstruction, and arising from some stimulus directly affecting those minute vessels.—It is not easy to explain the suddenness of the appearance of anasarca in some instances on any other principle. On the same hypothesis, the sudden diminution of anasarca, while an effusion into the ventricles of the brain or cavities of the pleura takes place, may be readily understood.

Diminished absorption may arise, either from a mechanical pressure upon the trunks of some of the large lymphatic vessels, or from some unusual state of their minute orifices, or from some languid action of the lymphatic system.—The evidences in proof of those several causes of diminished absorption are, it is apprehended, quite satisfactory.

Thus the enlargement and swelling of an entire cluster of glands (as of the axillary or inter-

nal inguinal glands) are followed by a dropsical affection of the corresponding limb.—Again, many instances have happened, which seem to shew, that the minute orifices of the lymphatics sometimes refuse to admit the fluids presented to them. This has led practitioners to suppose that they possess a kind of elective power, though the more probable explanation is, that they are closed by the inflammation of their extremities in consequence of the acrimony of the effused fluid.—As to the languor of the lymphatic system in general, it has been commonly supposed to follow, very frequently, the febrile, and inflammatory, and exanthematous affections.

It would be impossible to explain many cases of anasarca without supposing that there may be both an increased discharge from the exhalents, and a diminished absorption. Perhaps the most familiar example of this is that which follows protracted acute diseases, where there is an increased action of the arterial system, in order to repair the waste, while at the same time the absorbent vessels are in a state of debility, in common with the rest of the system.

Besides these obvious causes of the various phenomena of dropsy, there is another, which,

although it has not entirely escaped the observation of practitioners, has not received due attention, and that is, the peculiar condition of the fluid poured out by the exhalents. No one can doubt, that this must vary according to the state of the circulating mass, and that if any poisonous matter be mixed with the blood, or if there be any unusual combination or proportion of the several constituent parts of that fluid, the discharge from the exhalent arteries cannot be of the usual quality. But the full influence of this altered condition of the interstitial fluid is not perhaps sufficiently understood.—This however may be illustrated by considering the succession of events in two different cases, one of general, and the other of partial dropsy.

The former of these is the anasarca already described as supervening to scarlatina. In that instance, it is probable, that after the declension of the eruption, the circulating mass becomes tainted with the specific poison of the disease, and that the fluid poured out by the exhalents irritates, by its acrimony, the extremities of all the vessels with which it comes in contact, in consequence of which a kind of inflammatory state of those parts is induced. In the cellular

membrane, there must therefore be an accumulation of the interstitial fluid, because the orifices of the lymphatics are constricted, while the exhalent arteries are stimulated to increased activity. But the surfaces of the serous membranes lining the internal cavities must suffer still more from this acrimonious state of the exhaled fluids, since they are so very susceptible of inflammation. This, and perhaps this alone, can explain the suddenness of attack of the anasarca, the heat and tenderness of the surface, and the occasional alarming affections of the head and thorax; for these latter symptoms evidently arise from the inflammation of the surfaces of the ventricles of the brain, or of the cavities lined by the pleura.

Perhaps it may appear to many, that the partial dropsy alluded to affords a still more satisfactory illustration of the influence of the condition of the circulating mass upon the phenomena of this interesting disease. The affection which is meant, is that which follows swelling and inflammation of the glands within Poupart's ligament.

When this occurs in the male, as it has done, from a fracture of one of the innominata, ædema of the limb, without any unusual symptoms, follows. But when the same circumstance happens

in women after delivery, the thigh and leg are affected with a shining, hot, tense, elastic, painful swelling, which does not pit on pressure, and which pursues a very different course from the ordinary local ædema. In the above swelling of the male, if the affected limb be punctured a watery fluid is discharged, but no such fluid issues from punctures in the swelled leg of puerperal women.

The cause of obstruction cannot constitute the difference in the phenomena of those two cases: for in both instances it must be the same viz. the mechanical pressure of the enlarged glands; but in the male the condition of the circulating mass may be supposed to be natural; whereas in the female, after delivery, it is well known that the blood contains an unusual proportion of fibrine, and consequently it possesses an extraordinary disposition to coagulation. The shining, hot, tense, elastic, and painful state of the limb, are the consequences of the effused fluid having coagulated. Dr. Blackall (page 104) has recorded the case of a sailor, whose constitution, by the by, had been ruined by mercury, which still farther elucidates this subject. In

describing the appearances on dissection, he gives, *inter alia*, the following account.

"The cellular membrane of the trunk and extremities was every where loaded with a coagulated semi-transparent effusion, which gave an unusual resistance to the knife. This was particularly the case in the parietes of the abdomen and in the loins, and certainly explained the tension and soreness to the touch, not common in anasarca. The fluid which drained off from the incisions was very glutinous, and on exposure to air for some time, formed into an apparently gelatinous substance, which, on being heated, separated into a solid lymph and thin fluid. The serum of the pericardium coagulated strongly by heat; that from the thorax and abdomen in a less degree; and the water of the ventricles of the brain was the most diluted, though still coagulating to an unusual extent."*

This explanation, it may be alleged, is founded upon the exploded doctrine of Boerhaave; but while the author admits, in common with the rest of the profession, that the humoral pathology, so universally adopted about a hundred years ago,

* Blackall on Dropsies, p. 110.

was both unphilosophical and inconsistent with the phenomena of diseases, he must be permitted to express his opinion, that in the present day too little attention has been paid to the condition of the blood. Experiments have shewn, that the injection of the most harmless fluids, such as milk, into a vein, has produced most injurious effects ; —they have equally proved, that certain poisonous substances received into the stomach increase or diminish, in a remarkable degree, the circumstances which favour the coagulation of the blood—and observations upon the effects of disease have unequivocally evinced, that those experiments are not fallacious.

Besides, the author suspects, that the interstitial fluid may be rendered acrimonious by the increased activity of the exhalent arteries, although the circulating mass may be natural and healthy, just as increased discharges from the same vessels upon the surface of the intestines, excited by certain purgative medicines, are well known to be acrimonious. He does not however, deem it necessary to insist upon hypothetical points.

Such being the different causes of dropsy, it becomes an object of great importance to distin-

guish them in the several cases which are met with in practice, and it must be admitted, that before the publications of Dr. Wells and of Dr. Blackall, it was exceedingly difficult to do so. Judicious practitioners formed their diagnosis from a consideration of the previous history, and from the state of the pulse, and of the skin, and other symptoms ; but although now and then they were correct in their decision, cases often occurred which baffled their skill.—The method of distinguishing those different cases suggested by Dr. Blackall, furnishes a certain mark by which the nature of the disorder in any given instance, can at once be ascertained.

It may be laid down as a general rule, that wherever the urine contains coagulable serum discoverable by any degree of heat, not exceeding the boiling point, there must be either an increased activity of the exhalents, or such a condition of the circulating mass, that when exhaled it becomes acrimonious or stimulating, or that there is a combination of both causes. It may also be concluded, that wherever the urine is devoid of coagulable serum, the cause is diminished absorption, from some mechanical compres-

sion of the lymphatics, or from some impaired power in their branches or extremities, or that it is an increased flow from the exhalents, dependent on laxity of the fibres, or defect of the red globules of the blood. By this very simple characteristic of the urine, all cases of general dropsy may be comprehended under two classes—an arrangement which is calculated to direct the practice, and to secure the patient from having the disease aggravated by the remedies prescribed.—It is manifest that there must be many cases where no cure can be expected.

First.—Of dropsies attended with coagulable urine.—As in all such cases there is either increased activity of the exhalents, or some altered condition of the circulating mass, which renders it acrimonious or stimulating when exhaled, it is perfectly obvious, that all medicines capable of aggravating such causes ought to be most carefully avoided. And since it is clearly established, that preparations of mercury have a direct tendency both to increase the action of the arterial system, and to alter the constituent parts of the blood, they must be regarded as most especially inadmissible.

The author has never met in consultation with any practitioner of discernment and experience, who has not admitted the fact, both that mercury and squills frequently fail to give relief in cases of general dropsy ; and also, that in many instances their exhibition has been succeeded by a rapid and mortal aggravation of the symptoms. If any reliance can be placed on the validity of the observations in the preceding pages, the reasons for those failures may be easily comprehended.

Were any further illustration required, the author could state several distressing cases to which he has been called, even since the publication of Dr. Wells' and Dr. Blackall's valuable hints. The patients alluded to, while under a course of mercury and squills, had been unexpectedly seized with alarming breathlessness, or violent pain in the side, or sudden delirium, with a sharp pulse, for which they had been very properly bled and purged, while the mercurial medicines had been discontinued. But although a rapid amendment had followed this change of treatment, the use of the mercury had been resumed whenever the alarm had fairly subsided, and a hopeless recurrence of all the bad symptoms had ensued.

Errors so detrimental in their consequence, may be always guarded against by the obvious expedient of boiling the urine ; and it may be truly said, that without this preliminary investigation, no physician is warranted in prescribing a single dose of mercury for the cure of dropsy.

An exception against this rule may probably be claimed in favour of cases where some organic disease is complicated with dropsy, but experience has shewn, that mercury is even more injurious under such circumstances, for it accelerates the progress of the organic affection. The facts recorded by Dr. Ferriar and by Dr Blackall, and by several other impartial observers, are confidently referred to, as furnishing a strong confirmation of this assertion.

Although the squill certainly does not exert the same baneful influence on the sanguiferous system that mercury does, it cannot be deemed a safe medicine where the dropsical symptoms are attended with coagulable urine. Its stimulating property may indeed be said to be corrected by the sickness at stomach which it occasions, but there is every probability that it increases the action of the exhalents before it affects the stomach.

The necessary inferences from this account of the means to be avoided in the treatment of such cases of dropsy is, that the only proper remedies are to be found in whatever can allay the inordinate action of the exhalent vessels, and restore the healthy condition of the circulating mass. Keeping this principle in view, the suitable medicines are to be adapted to the circumstances of individual cases; and all that can be expected in this work, is a short enumeration of the principal means.

Bleeding has in modern times been seldom practised, unless an acute pain of the side, or excessive breathlessness, indicate topical congestion; but there are few instances where there is a pretty firm coagulum in the urine in which venesection will not be found useful. The prudent plan is to draw a small quantity at first, and to repeat the operation as it may seem necessary. In all cases where the dropsical symptoms have come on suddenly, and where they have followed scarlatina, this is of such essential importance, that if performed early, it always shortens, and often checks the progress of the complaint, whereas if it be neglected, effectual relief is seldom afforded.

Next in efficacy to the subtraction of blood, is the cautious use of the digitalis.—This medicine, in small doses, repeated every three, or four, or five hours, as the urgency of the symptoms may demand, proves a most useful auxiliary to blood-letting in all inflammatory affections, and also particularly in the cases under consideration.

The most certain preparation of the digitalis in this part of the world is the saturated tincture, the dose of which ought not in chronic cases to exceed from five to ten drops; and if any untoward symptom, such as pain over either eyebrow, or sickness, or giddiness, take place, its use must be instantly discontinued. At any rate, it is seldom necessary to persevere in this remedy longer than from ten days to a fortnight.

To these rules for the employment of digitalis there is one exception, viz. where the symptoms, from neglect or mismanagement, are so urgent as to threaten immediate death. In several instances of that kind, as well as in cases of pneumonia, where there was every evidence of effusion, the author has seen an unexpected recovery, apparently in consequence of repeating the digitalis every hour till its influence on the system was

distinctly marked. As cases of that description admit of no delay in the means employed, he has been directed in the doses which he has prescribed, rather by the violence of the symptoms, than by the age or constitution of the patient.

Thus he was called some time ago to visit an infant under six months of age, affected with epidemic catarrh, in whom apparent effusion into the lungs had occurred, notwithstanding the most active and judicious treatment—and to this infant a drachm of the saturated tincture of digitalis was given, in divided doses, within twenty-four hours, with the most perfect success. When it is mentioned, that the little patient was under the charge of Dr. Abercrombie, it is unnecessary to add, that there could be no mistake, either in the quality of the medicine, or in the regular administration of the doses advised.

An opinion having been lately disseminated on high authority, that frequent and large doses of fox-glove are absolutely poisonous, the author has deemed it necessary to state explicitly, that in cases seemingly desperate, large doses of that medicine can do no harm, and may effect a sud-

den change in the symptoms. He cordially, however, assents to the propriety, and even necessity, of prescribing small doses in all chronic cases.

Cooling laxatives are highly useful in the cases of general dropsy, comprehended under this head, but the saline purgatives commonly employed, often disappoint the expectation of the practitioner, probably in consequence of the debility which they produce.—Inexplicable as the fact may appear, it is found that a combination of medicines calculated to act upon the different portions of the alimentary canal, produces fully as copious a discharge from the bowels as any of the saline purgatives, without occasioning any inconvenience.

Nothing but experience, it must be owned, could make one believe that a scruple of rhubarb, as much jalap, half a drachm of powdered senna leaves, and two scruples of the crystals of tartar, taken six hours after eight or ten grains of the compound extract of colocynth, debilitate by their operation far less than a single ounce of Epsom salts. The repetition of the laxative must be regulated by the circumstances of the individual case.

On some urgent occasions, preparations of antimony, and also gamboge, ought to be added to the other laxatives. Of the utility of the elaterium the author cannot speak from his own experience, as he never has recourse to doubtful means when he can depend upon those with the powers of which he is acquainted.

After these preliminary measures, the most useful remedy in the cases under consideration, is the super-tartrite of potass, a medicine which, in the practice of the late Dr. Home and Dr. Ferriar, was found to be far superior to every other diuretic employed for the cure of dropsy. It is probable that two circumstances have concurred to throw discredit upon the cremor tartari, viz. its indiscriminate use in all cases of dropsy, whatever may be the cause, and the form and dose in which it has been given.

It requires only a very little reflection to be convinced, that wherever dropsy arises from laxity of the simple solids, or deficiency of the red globules of the blood, this medicine, in common with all other neutral salts, must be highly prejudicial, and that it can only be useful, where the circulating mass contains an undue proportion of

coagulable matter, or where there are glandular obstructions.

With respect to the dose and formula of the medicine, many errors, it is apprehended, are committed.—Half an ounce, the dose recommended by Dr. Ferriar, is much too large for daily use, two drachms being quite sufficient, and these ought to be dissolved in at least a quart of water.—Physicians who profess to imitate the operations of nature, ought to have remarked, that in all mineral waters, the saline substances are in a state of great dilution. The addition of the subborate of soda, in the proportion of one drachm to two of the super-tartrite, will be found to add to the efficacy of this remedy, and to the facility with which it can be taken.

None of the other saline diuretics seem to possess the same efficacy as the cream of tartar; but when it is necessary to vary the preparation, from peculiarity of constitution or other reasons, the nitrate, or carbonate, or tartrite of potass, may be employed with the same precautions respecting the dose and the dilution. The latter of those preparations was in high credit about thirty years ago, and has probably fallen into

desuetude, from the improper manner in which it has been administered.

In the cases under consideration, all other medicines which have the power of stimulating the kidneys, and have in consequence obtained the name of diuretics, such as squill, (as already stated), oleum juniperi, infusions of broom tops, juniper berries, &c. are obviously inadmissible.

Sudorifics were at one time much employed for the cure of dropsy, and have been, the author thinks, improperly relinquished within these few years, for cases every now and then happen where the urgent symptoms are not relieved by venesection and by purgatives, and where, from peculiarity of constitution, the fox-glove is inadmissible. In such cases, the aqua acetitis ammoniæ, combined with a solution of the tartrite of antimony, produces, through a copious diaphoresis, the beneficial effects which commonly result from the digitalis. The more stimulant diaphoretics are not to be hazarded.

It is not necessary in this work to give any minute directions respecting the diet, air, and exercise, &c. of patients labouring under the dis-

ease in question. The nature of their complaint plainly indicates the necessity for mild food, and for plentiful dilution.

Secondly,—Of dropsies where the urine contains no coagulable serum.—In those cases the cause of the disease, as already mentioned, being diminished absorption from some state of the lymphatic vessels, or being an increased flow from the exhalents, in consequence of laxity of the fibres or a defect of the red globules of the blood, it is evident that the remedies to be employed ought to be calculated, either to promote absorption, or to improve the tone of the simple solids, or to increase the red globules of the blood.

The first circumstance to be attended to in all those cases, is of course to distinguish the cause of the complaint, and it must be owned, that on many occasions this is a matter of great difficulty.

When there is imperfect absorption, there are, a languid action of the heart and arteries, a sluggishness of mind as well as of body, a sallowness of the skin, and commonly, even in the early stages of the disease, a short dry cough, or a slight

degree of breathlessness, excited by trifling exertions. The tongue too is generally more or less loaded, and the urine high coloured, as well as scanty.

On the other hand, those cases where the effusion arises from laxity of the fibres, or deficiency of the red globules of the blood, are marked by a whiteness of the complexion, with more clearness of the skin than in other cases, pallidness of the lips, the faculties of the mind not being weakened in proportion with the powers of the body, the tongue being usually clean, and (at the beginning of the complaint) there being neither cough nor breathlessness on making slight exertions, and the urine being pale and watery. The anasarca, too, more readily shifts from one part to another, according to the posture of the body, and pits more deeply on being pressed upon than in the former cases.

Although these marks of distinction, together with a knowledge of the previous history of the patient, enable the practitioner to decide in many instances on the cause of the complaint, it is not to be concealed, that complications every now and then occur which embarrass the most expe-

rienced of the profession. It cannot be doubted too, that defect of absorption may be combined with laxity of the fibres and with decrease of the red globules of the blood, and thus an additional difficulty is occasioned.

Till the state of the urine was understood, the impossibility of distinguishing the cases arising from such different causes, was a very common source of the frequent disappointments in the cure of dropsy, which are so well known. But as it may be assumed, that wherever the urine contains no coagulable serum, tonic remedies cannot do irreparable mischief, there is less chance than formerly of any fatal mistake in the employment of the remedies now to be considered under the heads already specified.*

I. Medicines which promote absorption.—It is to be particularly noticed, that on some occasions torpor of the lymphatics seems to be connected with disordered functions of the chylopoetic viscera, and cannot be removed till the regularity of those functions be restored. Such are, probably, the cases where Dover's electuary, and

* Page 150.

other combinations of laxatives, with metallic tonics, appear to be successful. It is a good rule, therefore, in all cases where there is any evidence of languor in the action of the lymphatics, to premise one or more doses of the laxative medicine, described page 146.

When the course of the absorbents is obstructed by mechanical causes, such as enlargement of the internal glands, aneurisms, or other organic diseases, it is little probable, that any other means than the removal of the mechanical cause can be of any avail, and it can scarcely be controverted that in all such cases mercurial medicines are of doubtful efficacy.

But when the diminished power of the absorbents arises from some torpid state of the extremities or branches of those vessels, a cautious course of mercury and squills may be prescribed with great advantage, provided it be not continued too long. Perhaps the most effectual way of guarding against this error, is by having the state of the urine examined from time to time; for whenever there is the slightest appearance of coagulable serum, the mercury must be instantly discontinued, even although it seem to have ex-

erted in other respects little influence upon the system.

That with these precautions mercurial medicines may be had recourse to in many instances not only without hazard, but with manifest advantage, is fully admitted ; but it merits consideration in every individual case, from the circumstances already explained, whether some other medicine might not be equally conducive to the cure of the dropsical affections alluded to. The various preparations of iron, combined with some of the vegetable tonics, as the cinchona, or the myrrh, or with some of the neutral salts, may often be substituted with great advantage for mercury.

II. Medicines which improve the tone of the simple solids, and increase the red globules of the blood.—For laxity of the fibres the appropriate remedies are what have been called tonics. The cinchona, the kino, and the several preparations of iron, with nourishing diet, and a diminished allowance of liquids, are the means chiefly to be depended upon.

Cases now and then occur where small doses of the mild preparations of mercury, alternated

with the bark, or other vegetable tonics, fulfil completely the above views ; and it may be added, that unless mercury be given most indiscreetly in such cases, it cannot do much harm. At the same time, the author is perfectly convinced, that in the cases under consideration, preparations of iron, and where these disagree, the kino, produce all the good effects, without occasioning any of the hazards of mercury.

With respect to the usefulness of Kino, he feels it necessary to offer some explanation, because at one period of his professional life he thought very differently of that drug. Having for several years after beginning practice, seen prescriptions containing kino prove totally inefficacious, he formed a most unfavourable opinion of the powers of that medicine ; but the interesting views which the experiments of Dr. Orfila and Mr. Brodie upon poisons suggested, induced him to subject it to a farther trial, more especially because he was often disappointed in the effects of metallic tonics. Many patients in whom the simple solids were remarkably relaxed, had a sense of tightness in the chest, or a distressing pain over the eyebrows, after a very few days perseverance in the use of the sulphate of iron, to

the extent of only three grains daily, and others suffered equally from ten drops of the muriated tincture twice a-day.

Reflecting upon the cases which he had witnessed, it occurred to him, that the inefficiency of kino might be owing to some error in the formula or the dose, or in the selection of the proper disease in which it should be administered, and he resolved therefore, in his trials, not to be limited by established rules. The result has been his conviction, that there is no vegetable tonic hitherto discovered which in many cases more certainly increases the firmness of the simple solids, and adds to the coagulability of the blood, without disturbing the powers of digestion, and without injuring the nervous system.

If the kino be given in the form of tincture, it agrees with constitutions which cannot bear the cinchona, and it produces a more rapid influence both upon the circulating mass and upon the simple solids, than any other medicine which the author has seen. Dr. Pemberton, (page 96), and several other eminent physicians, have appreciated fully the value of this drug; but as they sanctioned this use in a substantial form, and as

many of them reommended it for the purpose of restraining hemorrhages, it is not wonderful that it has fallen into discredit. Kino made into pills probably passes through the bowels, unchanged in nine cases out of ten ; and as to its utility in hemorrhages, every physician who understands the subject must be convinced, that its operation upon the system is too gradual to produce the immediate effect required. The proper formula should be the tincture, of which from two to four drachms may be given daily.

The regulation of the diet in the cases under consideration is of the very first importance. It ought to consist of light nourishing food, with a very small proportion of fluids, and should always be particularly directed by the practitioner.

These remarks on general dropsy, which have extended much beyond the limits the author had prescribed to himself, supersede the necessity for any minute discussion on the dropsies of the several cavities,—and therefore a few brief hints need only be offered.

Ascites, being the most ordinary form of watery accumulations within the great cavities, de-

mands the first attention.—Its characteristic symptoms are sufficiently well known—and its causes are those already detailed. In one particular it differs from the usual cases of anasarca, viz. in the state of the accumulated fluid, which often is thick and gelatinous.—This, which, although well known, has not been attended to as it ought to be, might have furnished a safe guide for the practice, had the more sure one of the state of the urine been still undiscovered.

From the ample details in the preceding pages, it would be a needless repetition to point out the marks by which it may be determined whether mercury ought to be employed in any given case of ascites.—It is sufficient to mention, that even where there is evidence that the liver is diseased, that mineral is not to be ventured upon if the urine contain coagulable serum.

In the HYDROTHORAX, which on many occasions is with great difficulty distinguished in its early stages, the digitalis has lately been commonly preferred to mercury.—And there is every reason to conclude, that in more than the majority of cases mercurial medicines would be most detri-

mental. Undoubtedly, wherever symptoms resembling those which terminate in hydrothorax followed the exanthemata, their violence is, invariably, aggravated rapidly by the use of mercury, of which medical records bear ample testimony.

In all such cases, both the progress of the disease, and the coagulable serum contained in the urine, unequivocally denote an altered state of the pleura, approaching more or less to inflammation, as already explained, page 135; and consequently every article of medicine and of diet which does not contribute towards the removal of inflammation and the alteration of the state of the circulating fluids, is to be most anxiously avoided. It may be unnecessary to add, that on many occasions the timely use of the lancet produces an almost immediate abatement of all the distressing and alarming symptoms.

But the modification of dropsy which seems at present to be most commonly managed injudiciously, is the HYDROCEPHALUS.—Practitioners who differ totally in their explanation of the nature of that alarming disease, cordially agree in

recommending mercury for its cure. Indeed, it would appear incredible, were it not that the fact could be established by the clearest evidence, that practitioners who declare hydrocephalus to be incurable, invariably prescribe the most active exhibition of mercurial medicines.

In estimating the effects of remedies, scientific practitioners and ignorant persons often draw very opposite conclusions.—The former make every allowance, both for accidental coincidences, and for those invisible minute changes in the internal parts of the body, which have been called metaphorically, the efforts of the constitution, and by observing carefully the sensible operation of any particular drug, and its influence upon the disease, in numerous and various instances, they learn its true virtues.

The latter on the contrary, consider that every alteration in the disease is owing to the immediately antecedent occurrence, and consequently they attribute, most commonly, the cure of any protracted or dangerous illness to the last medicine which had been exhibited, without taking at all into account the influence of the means previously employed, or the progressive opera-

tions of the system which naturally happen in the individual disorder.—It might, however, be expected, that both the scientific and the uninformed observer could draw no other than one inference, in every instance in which the disease, from experience, is found to be *incurable.*

Obvious, and even trite, as these remarks may appear, they cannot be misplaced, if they lead the profession to adopt a consistent mode of practice in the disease under consideration.

All the phenomena, both of the acute and symptomatic hydrocephalus, imitate so precisely the symptoms which arise from a mechanical injury of the head, followed by inflammation of the membranes of the brain, that it is quite surprising that the coincidence has escaped the notice of practitioners. Thus the violent pain of the head exciting great irritation of the stomach and primæ viæ, and afterwards the convulsions, the delirium, the stupor, and the sterterous breathing—which may be said to be in general the only invariable symptoms in hydrocephalus—are precisely the same which occur in injuries of the head under the circumstances specified.

Although the consideration may be humiliating, it is too instructive to be passed over, that the very reason urged by practitioners of deserved eminence for the employment of mercury in hydrocephalus, are not unfrequently in direct contradiction to their own explanation of the nature of the disease. A late writer on this subject of high reputation, for example, attributes hydrocephalus acutus to increased action of the arteries, with at the same time veinous congestions within the cranium, and recommends mercury for the purpose of substituting a new action. But the most ample proofs, it is presumed, have been brought forward in the preceding pages, to shew that mercury increases the arterial action, that it alters the nature of the circulating mass, and that it impairs the energy of the nervous system—and therefore its operation must tend directly to aggravate those alleged causes.

On this subject the author can express his sentiments with more than usual confidence, having from his earliest years had innumerable opportunities of attending to the effects of mercury in this disease. In no instance under his observation has that medicine ever proved successful,

—and he fully agrees with Dr. Blackall in opinion, that on many occasions the injudicious use of that mineral has actually occasioned the disease.

Should it be asked what substitute for mercury the author would propose for the cure of hydrocephalus, the answer may be readily anticipated from the preceding observations. Where in any individual case the disease is curable, the only remedies to be depended upon are bloodletting, both general and topical, repeated doses of powerful purgatives combined with diaphoretics, especially preparations of gamboge and of antimony, digitalis in doses exhibited every hour or two according to circumstances, and large and successive blisters.

In these brief notices on this interesting subject, the author has purposely declined a particular investigation of the signs by which hydrocephalus may be distinguished from the several diseases which it resembles in many of its most striking characters, and also any disquisition on its causes.—He cannot avoid however remarking, that complications are occasionally met with which perplex the most experienced and atten-

tive practitioners, and that much mischief has arisen from the hasty decision of rash and superficial observers. To his certain knowledge, affections of the stomach and bowels have been converted into hydrocephalus, by the use of mercury prescribed on the presumption that the patient already laboured under that disease.

Another dropsical affection requires particular notice in this work, because mercury has been hitherto considered to furnish the only remedy, although no practitioner can produce competent testimony in favour of its ever having accomplished a cure. The disease alluded to is dropsy of the OVARY.

This is perhaps the most ordinary example of encysted dropsy, and the phenomena which it occasions are so various, that it would be inconsistent with the views of this work to enumerate them particularly.—But it is necessary to state, that where in an enlarged ovary fluctuation can be perceived, it is often impossible to determine whether the fluid be contained within the proper coat of the ovarium, or within large hydatids. Even in the advanced stages of the disease, where, from the equable diffusion of the swelling over

the whole abdomen, it may be so easily mistaken for ascites, dissections have shewn that there were one or more large hydatids. Sometimes, too, indurations, which advance at irregular periods to inflammation and ulceration, are complicated with hydatids.

In general, where the surface of the swelling is not unequal, and where fluctuation can be perceived before the bulk of the tumour has become considerable, it may be presumed, that the watery collection is contained within the coat of the ovarium ; and when the swelling has attained such a size as to require tapping, this conclusion may be drawn with great certainty, if the fluid discharged prove to be thick and gelatinous.

This latter mark of distinction is of much more importance than might at first sight be apparent. It is of the same nature with the effusion in those cases of ascites in which the urine contains coagulable serum, a circumstance which has hitherto very unaccountably been disregarded.

Upon what principle mercury has been so universally employed in all cases of enlarged ovarium, notwithstanding the variety of age, constitu-

tion, and state of general health of the individuals affected with it, no satisfactory explanation has hitherto been given.

Analogical reasoning is little in favour of the practice. Hydatids have never been cured by mercury, even when situated in parts of the body where that mineral could exert a ready influence. As to accumulations within the proper coat of the ovary, they are too isolated and unconnected with the absorbent system, to be affected by medicines capable of increasing the actions of the lymphatics.

Far less can experience be pleaded in justification of this practice, for the author speaks within bounds, when he avers, that he has known mercury employed in some hundred cases of diseased ovarium, without its having proved useful in a single instance. A few apparent exceptions have been reported to him by old pupils; but from the uniform result of all the cases which have been under his own notice, he is induced to believe, that in those alleged exceptions, the disease had not been enlargement of the ovary.

But while mercury can be of no utility whatever, it may, and certainly often has produced irreparable injury, not only upon the general constitution, (for the reasons so fully explained in this work), but also in all cases where indurations of portions of the ovary are complicated with serous collection. Instances of this kind every now and then occur, and cannot be distinguished till their progress towards cancerous ulceration be so far advanced as to become manifest. A most impartial attention to many of those cases has convinced the author, that indurations, which might have remained for years without inconvenience to the patient, have been forced into morbid activity by a course of mercury.

From the inutility or injurious tendency of the various means commonly employed in cases of enlarged ovarium, the author for many years confined his views in the treatment of that disease, to promoting the general health, and to palliating distressing symptoms; and as he not unfrequently saw instances where the local affection, after a certain progress became stationary, and ceased to give any uneasiness, he supposed that no other resource could be safely relied on.

Within these five years, however, he was induced, by particular circumstances, to make some experiments, for the purpose of determining whether the enlargements in question could possibly be removed; and in doing so, he did not neglect the necessary precaution, of avoiding every thing which could at all injure the general health.

Adverting to the effects of percussion and of pressure in chronic rheumatism, and knowing the influence of the continued use of the muriate of lime in indolent glandular swellings, he was led to the trial of those several means, as being at any rate perfectly safe. He advised, therefore, that moderate and equal pressure of the abdomen should be made by means of a suitable bandage, that the enlarged part should be subjected twice a-day to gentle percussion, and that a course of small doses of the muriate of lime should be continued for at least several months. Where pain or tenderness was experienced on the ovary being pressed upon, he recommended, in addition to the above means, the daily use of the warm bath.

This plan of treatment has been much more successful than he had anticipated. In seven cases, in which it has been tried, the enlargement has so

completely subsided that it is no longer tangible.—There could be no mistake in the majority of those cases, not only because the size of the diseased ovary was very considerable, the fluctuation was distinct, and all the ordinary characteristics were well marked, but also because the nature of the affection had been previously ascertained by some of the most experienced practitioners in London.

In the first three cases, the author considered that there might be some accidental coincidence independent of the remedies employed, and therefore he did not venture to allude to them even in lecturing, being always unwilling to give any hints which might lead to delusive speculations in the practice of physic. But the fortunate issue of four additional cases, entitles him to presume, that the above means of cure bid fair to prove extensively useful.

He may venture thus far, he trusts, without the imputation of holding out ill-founded hopes on this subject; but to prevent all risk of misleading, he thinks it right to specify explicitly, that the difficulty of distinguishing the presence of hydatids, must, in every individual case, ren-

der the efficacy of the practice doubtful, even although further experience should establish the fact, that where the effusion is within the proper coat of the ovary, this method of cure invariably succeeds.

Previous to the diminution of bulk in all the successful cases, it is proper to add, that the circumscribed enlargement of the ovary has invariably become soft. This change was so remarkably obvious in the first of the successful cases, that the indentation of the patient's finger upon it was similar to what occurs in anasarca, although it had been formerly quite incompressible. As the tumour extended as high as the right hypochondre, this important change was first perceived by the lady herself.—The author refrains, on this occasion, from making any detailed commentary on the result of the above practice.

SECTION XI.

Of the Use of Mercury in Croup, and in Inflammation of the Iris.

In some parts of America, calomel has been employed for many years, as the chief remedy

in CYNANCHE TRACHEALIS,* and it had been repeatedly prescribed in this city, by medical men who had practised in the West Indies, before the author could be persuaded to sanction its use.

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* The observations of the author on the treatment of croup in America can be meant to apply only to some limited section of the country.* There is no disease, the nature and treatment of which is more settled in the United States than the one in question.—It is known to be of a highly inflammatory character, and exceedingly rapid in its progress and termination—when encountered in the attack almost certainly subject to medical control, but as certainly fatal if left to itself or improperly treated. The customary mode of treatment is in perfect conformity to this view of the disease ; viz. by emetics, copious blood-letting, active cathartics, blisters, warm bath, &c. Emetics are first mentioned because they are generally prescribed on the invasion of the disease, for at that period it generally appears to be entirely local, and, whether at this time it depend on spasm or inflammation, it is commonly arrested by an emetic before symptomatic fever ensues.

With regard to the use of calomel in croup, it is now, so far as my information extends, only employed as an auxiliary ; indeed I know not that it has ever been regarded in this country in any other light. Mercury was used, combined with other medicines, in this disease, in New-England, as early as the middle of the last century, and Dr. Rush in an essay on Cynanche Trachealis written more than twenty years ago, advised the use of calomel after blood-letting, vomits and purging. At the present time calomel is also in general use when the disease is protracted and dangerous.

An abstract of the case of my own child, which occurred during the last winter, may serve to shew under what circumstances and in what quantity it is sometimes given. The child was twenty months old. In the afternoon of the day of the attack he slept some hours in a

* I know it is said by Dr. Chapman that "some of the respectable practitioners both of this country and of Europe, *trust exclusively to calomel*" in croup, but if there be any who are thus presumptuous in their practice in this country, they have not had the courage to publish it to the world.

He was informed that the method of exhibiting it, was to give to a child of three or four years old, five grains evening and morning, and that it cured the disease without producing any sensible operation.—Such an account held out no inducement for trying so hazardous a remedy, more

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room where the floor was wet. In the evening he slept without manifesting any symptoms of indisposition till ten o'clock, when he awoke with a dry shrill cough and wheezing, difficult respiration.—Gave him instantly half an ounce of ol. olivar.—no relief—in ten minutes gave a dose of antim. tart. in solution—in fifteen minutes he was sickened, and continued to puke, at short intervals, till twelve o'clock—was much exhausted but not perfectly relieved—at two o'clock took ten grains of calomel,—slept till morning without any apparent aggravation of symptoms—(a fallacious and dangerous interval—) at nine o'clock bowels freely evacuated, cough and difficulty of breathing returned—surface became heated and the pulse frequent and hard—kept him constantly nauseated with antimony—Twelve o'clock lost twelve ounces of blood from a large orifice in the jugular vein—a large epispastic was applied to his throat ; was partially relieved for two or three hours, when all its symptoms began to increase ;—put him into a warm bath—increased the dose of the antimonial solution until he vomited—Five o'clock lost two or three ounces of blood from the same orifice—bowels opened by a stimulating injection—Eight o'clock, same evening, the cough still sonorous—breathing difficult and the pulse wiry—took eight ounces of blood from the temporal artery, which induced complete syncope. From this time, from three to five grains of calomel, according to the frequency of the evacuations from the bowels, were given every three hours—symptoms much abated during the night ; next morning the difficulty of breathing and symptomatic fever increased, notwithstanding the continued use of nauseating medicines, and the evacuations produced by the calomel from the bowels.—Eleven o'clock A. M. pulse hard and one hundred and thirty in a minute, and the skin still flushed, took from 6 to 8 ounces blood from the temporal artery which again induced fainting,—twelve o'clock began to give three drops Tinc. Digitalis every two hours—Four o'clock, P. M. bath repeated—the

especially since he knew that the practice, under the direction of the late Dr. Wright, and some other physicians, who had resided in hot climates, proved so unsuccessful, that on more than one occasion, two children in the same family, treated according to this plan, died within a few days of each other.

About sixteen years ago, however, in consequence partly of the urgent representations of an old pupil (the late Dr. J. Anderson), and chiefly because the ordinary remedies frequently

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circulation is less rapid—heat more natural—has frequent evacuations of green matter from the bowels,—the calomel is continued—during the night give alternately the antimony and digitalis. The next morning, the third day of the disease, gave him a strong decoction of Polygala Senega, so as occasionally to cause vomiting—the calomel is continued—he is rapidly convalescing—In one week from the time of the attack he was walking about the room, after having lost in less than twenty-four hours about thirty ounces of blood, and taking in three days from ninety to one hundred grs. of calomel—He is now in perfect health.

This case is perhaps profitable to show what a child labouring under violent disease can endure rather than to point out what in ordinary cases is required. I am fully of opinion, however, that no treatment milder than what has been described would have subdued the disease, probably a more active one the child could not have borne. With these views of the case, I take great pleasure in expressing the warmest gratitude to my friends Drs. Cock & Stevens. It was treated principally by them during the most critical period; and to their energy and caution I am indebted as the means of preserving my child's life.—I.

proved uncertain, he was induced to give calomel a fair trial—and he must say, that the result of his experience has been so very different from that of the American practitioners, that he can only explain it on the supposition, that in different climates the same disease is relieved in different ways. At any rate, he can solemnly assert, that according to all that he has seen, no relief whatever has been afforded by that medicine, unless copious dark green-coloured stools, like boiled spinage, have been discharged, and that it requires large and repeated doses of the medicine to produce that effect. For example, to a child of seven years old, one hundred and thirty-three grains were given within sixty hours.

These circumstances led to the conclusion, that in this part of the world at least, wherever calomel has seemed to cure croup without affecting the bowels, the symptoms had not been those of that disease, but of the *spurious croup ;* and this opinion is confirmed by the fact, that in the only cases in which the medicine has failed under the author's direction (being in the proportion of four out of fifty), no evacuation whatever through the bowels could be produced, although antimonials, and jalap, and gamboge, and glysters, were employed as auxiliaries.

In reasoning upon this subject, it is extremely difficult to explain, in the first place, the safety with which a hundred and thirty-three grains of calomel could be given in this climate, within sixty hours, to a patient of seven years of age* ;— and, secondly, the relief which has invariably followed the discharge of the dark coloured evacuation. This latter circumstance, in particular, is the more perplexing, seeing that in all those cases the evacuations from the bowels were not fæces, but were combinations of bile and mucus in a substantial form, resembling, as already stated, boiled spinage, or the contents of the second stomach in ruminating animals.

Topical inflammation, it has been long known, may be relieved by watery, or as they have been called, chylous discharges from the bowels, and their efficacy in that respect has been usually explained, on the supposition, that a considerable portion of the circulating mass is in that way thrown off, through the exhalents and other minute vessels of the surface of the alimentary canal.

* In that instance, two very intelligent gentlemen then attending the author's class, voluntarily watched the patient by turns and administered the medicine ; and from their zealous attention on that occasion, he regrets that, through defect of memory, he cannot record their names. The child was a daughter of a respectable tradesman in College-Street.

But the immediate operation of calomel, where successful in croup, is most obviously upon the Liver, and yet there is no reason to suppose so direct a sympathy of the Larynx with that organ, as with the other viscera concerned in digestion. It would lead, however, to discussions totally inconsistent with the purpose of this work, to pursue this inquiry further, though it certainly merits the most minute investigation.*

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* It was the opinion of Dr. Rush that the good effects of calomel in croup depended on its exciting a counter-action in the whole intestinal canal; and there are some facts which seem to show that they are at least partly to be attributed to that cause. The dark green coloured evacuations mentioned in the text, which are a mixture of mucus and bile, are peculiar to the operation of mercury, and in almost every instance where this discharge is produced the patient recovers. In these cases the action of the medicine is obviously extended to the liver, as is proved by a continued and copious secretion of bile; but probably it has less effect towards subduing the disease in this way, than it has by the powerful impression which it makes on the mucous membrane of the intestines. Its utility cannot be owing altogether to its operation as a cathartic, for free evacuations produced by any other purgative medicine, have comparatively but little effect in subduing or suspending the violence of the disease.

The counter-action excited in the intestines, Dr. Rush supposes to lessen the disposition of the tracheal blood-vessels to discharge the mucus, &c. but it is not reasonable to suppose, that besides weakening the force of the disease by the powerful counter impression which it exerts on a distant part, that calomel also operates in the cure of croup, by continuous sympathy, on the mucous membrane which is the seat of the disease, increasing the action of the excretories during the passive or secondary stage of the inflammation, and thereby, unloading, and restoring to their healthy action the contiguous blood-vessels.—I.

However inexplicable the *modus operandi* of calomel, in cases of croup, appears to be, the success of the practice was such, as to encourage the expectation of its proving a safe and certain cure for that formidable disease ;—though, while he indulged this hope, the author, even from the beginning, was not inattentive to the probable dangers which might arise from the indiscreet employment of so active a medicine.

Thus he stated expressly, that "In some cases considerable weakness remains after the crouping has ceased, in consequence, partly of the violence of the symptoms, and partly of the operation of the calomel,"* He added, that he had seen "two cases, where, although all symptoms of the croup were removed by the use of calomel, the patients sunk from the weakness which followed ;"†—and concluded, that "those cases enforce the necessity for carefully watching the progress of the disease, so as to stop the calomel whenever the symptoms begin to yield."‡

Since that publication, he has been favoured with numerous communications on the subject

* Hamilton's Female Complaints, 1813. page 367.
† Hamilton's do. do. p. 369.
‡ Hamilton's do. do. p 370.

from old pupils, settled in distant parts of the kingdom, which confirm his former account, that the disease occurs in various degrees of violence in different situations,* and which convince him, that the severe forms of this affection do not yield to the exclusive use of calomel.—He has suggested, therefore, in such cases, that the chief reliance should be put in the remedies more usually employed to subdue inflammatory affections viz. bleeding, blisters, antimonials, and brisk purgatives. In giving this advice, he has commonly taken the liberty to add minute directions for the employment of those means, being aware, that in every acute disease, the progress of which is so rapid, every thing depends upon the timeous and steady application of remedies.

With respect to bleeding, there is often considerable difficulty in having it effectually performed.—The application of leeches in very young children, certainly, is followed by a considerable flow of blood, in consequence of the great vascularity of their skin; but this discharge

* "It is a curious and instructive fact, that, in proportion to the dampness of the atmosphere, is the violence of the disease.—Thus, in Leith it is more severe than in Edinburgh; and in some marshy districts it is much more violent than in Leith."—Hamilton's Female Complaints, 1813, page 365.

is so tardy, that, in many instances, it does not at all check the progress of the disease. The lancet therefore ought always to be first had recourse to, and in every point of view, the external jugular is the proper vein to be opened. Any quantity of blood may be quickly drawn from that vein in the youngest subjects, and in the violent cases alluded to, there is more risk in drawing too little than too much. Leeches may be employed with great advantage as auxiliaries.

Blisters have been commonly applied as near as can be to the seat of the inflammation, but they appear to have a better effect when put on the sternum.—The best purgatives are solutions of the tartrite of antimony combined with gamboge and jalap, and they ought to be given as soon as possible after the invasion of the disease. If they operate both upwards and downwards, so much the better.—Should the breathing be not relieved after the free operation of the purgatives, the bleeding from the jugular is to be repeated.

From the information he has obtained, he has reason to believe, that in the violent degrees of croup, this plan of treatment is much more suc-

cessful than the exhibition of calomel, and it therefore becomes a question worth serious consideration, whether, even in the milder degrees, the same method might not be preferred.

Two objections may be urged against this proposal; first, that the simple plan of giving calomel every hour or two till the dark-coloured stools be discharged, and then gradually discontinuing it, is much more easily accomplished; and secondly, that the prejudices of the attendants might not unfrequently prevent the practitioner from having recourse to the lancet, without which (it is obvious) the other means would prove of very little avail in many instances.

Probably a conviction of this truth is the reason that in some parts of this island, particularly on the sea-coast, where croup is more violent than in this city, several judicious practitioners have directed the application of a number of leeches, at the same time that they have administered the calomel with great activity. This practice has succeeded much better than the use of digitalis, which has been repeatedly tried.

The other inflammatory affection included in this section, for the cure of which calomel has

been strongly recommended, is OPHTHALMIA IRIDIS. This remedy was originally suggested in inflammation of the Iris, from its being complicated with syphilitic symptoms, and it was employed most successfully by the late Mr. John Cunningham Saunders of London.—It is to be particularly noted, however, that he recommended, at the same time, the most powerful measures for subduing inflammation, such as, bleeding largely from the temporal artery, the application of a number of leeches as near the eye as possible, and large doses of tartarised antimony.—He always too besmeared the eye externally with the extract of belladona, repeating it at such intervals as to keep the iris in a continued state of extreme dilatation.

In the preface to the second edition of Mr. Saunders's book, Dr. Farre mentions, that he himself has employed the calomel as successfully in cases of simple iritis, as in cases complicated with syphilis; and he has added the following observations on the action of mercury, which the author deems it necessary to notice.

"The certainty with which the mercurial action arrested the deposition of coagulable lymph

in syphilitic inflammation of the iris, led the editor to give this remedy a fair trial in simple inflammation of the iris, in which the disorganizing process by the adhesive inflammation is precisely the same, however it may differ from the former in its exciting cause. The result of the trial has perfectly satisfied him, that the mercurial action *alone*, when properly kept up, is sufficient to subdue the ophthalmia iridis in its most acute stage. —Although the full action of mercury is often efficient in arresting that disorganization of the various parts of the body, which results from the *gradual* deposition of coagulable lymph, within their interstitial textures; yet the free abstraction of blood is still essential to prevent its bolder and more immediate destructive effusions in phlegmonous inflammation. It is, however, too low an estimate of the operation of mercury, to consider it only as a specific against syphilis, or as an evacuant and promoter of certain secretions and excretions—it powerfully alters the action of inflamed arteries, more especially in respect to the effusion of coagulable lymph, which it in various degrees controls, or even altogether suspends.

" In relation to the general practice, this is perhaps the most important view which can be

taken of the operation of mercury on the vascular system; but it is not the place to inquire into the state of the body under which mercury is either capable or incapable of arresting the effusion of coagulable lymph. The curative result is sufficiently uniform in ophthalmia iridis, if the mercurial action be excited in the early stages of the inflammation, to urge the adoption of this treatment in preference to any other; but if the disorganizing process be very rapid, the use of this important remedy, which demands time to be efficient, may be aided by general or topical bleeding. It is not the quantity of mercury, but the mercurial action, which is required to interrupt the disorganizing process; and the former must be kept up till the latter is subdued. The observations of the author on the application of the belladona to prevent the contraction of the pupil, must be strictly attended to. If smeared over the brows and eyelids, its effect is produced without irritating the eye."*

Admitting in its full extent the signal success of the late ingenious Mr. Saunders, and of his very intelligent editor Dr. Farre, in cases of in-

* Preface to the second edition of Saunders on the Diseases of the Eye, page xxxviii, *et seq.*

flammation of the iris, which the author most willingly does, he ventures, with much deference, to suggest, that calomel had no other influence in the cure than in subduing the syphilitic virus.—He is inclined to attribute the success chiefly to the external application of the extract of belladona, which was so happily employed by Mr. Saunders; for it cannot be doubted, that if the radiated fibres of the Iris be kept in a constant state of contraction, so as to dilate the pupil to the utmost extent, the minute vessels of that delicate part must undergo mechanically such a change as shall probably prevent effusion from their extremities. But as the author cannot appeal to experience in this disease, he should perhaps have waved its consideration in this work.

It is, however, the reasoning of Dr. Farre on the action of mercury to which he wishes particularly to allude. Dr. Farre asserts, that "it powerfully alters the action of inflamed arteries, more especially in respect to the effusion of coagulable lymph, which it, in various degrees, controls, or even altogether suspends."

But in the very section of this work it has been shewn, that the action of mercury tends, by

exciting inflammation and effusion, to produce thickening of various membranes, particularly of the pleura—and several instances of that kind are recorded by Dr. Blackall, where the fact was proved by the appearances on dissection. This effect of mercury has been long remarked by the author, and it suggested to him, many years ago, a practical inference of some importance.

Every surgeon knows, that in cases of abscess of the mamma in the puerperal state, sinuses are apt to form, which are little disposed to heal, and which discharge a thin sanies. It is acknowledged, that the operation for the fistula ani is sometimes followed by a flabby pallid state of the parts, a tendency of the sinus to elongation, and an ichorous discharge. In many instances of both those affections, the author has advised the use of the blue pill, so as very slightly to affect the gums; and he has generally found, that whenever that event took place, the granulations became healthy, a well conditioned discharge appeared, and the healing process advanced rapidly.—These facts are quite inconsistent with the hypothesis, that Mercury suspends the effusion of coagulable lymph.

The Author intended originally to have considered the utility of mercurial medicines in Glandular Affections, in Chronic Rheumatism, in Chronic Eruptions of the Skin, and in Anomalous Complaints, but these pages have extended so much beyond his expectation, that he feels it necessary to conclude. He does this the more readily, because the remarks he has offered upon the effects of Mercury on the arterial system, and on the condition of the circulating mass, may serve to illustrate the cases where that Medicine can be useful or prejudicial.

Particular combinations of Mercurial Oxydes with other medicines, may, he is well aware, be employed advantageously on various occasions—and accordingly he believes that in certain stages of Glandular Affections, of Chronic Rheumatism, and of Chronic Eruptions of the Skin, the addition of a very small proportion of the Muriate of Mercury to some of the compounds of Antimony, increases the activity, without lessening the safety of those latter medicines. But he has always found, that when Mercury in any form is employed as an auxiliary, it can scarcely be given in too small doses; and at any rate, he ventures to advise, that when so administered, it

ought never to be allowed to produce its proper sensible effects upon the system.

He takes the liberty to add, that in the preceding pages, (as has been repeatedly stated), his observations apply exclusively to the Use and Abuse of Mercury in this part of the world.—Although, through the favour of a most intelligent Medical Friend, he has had access to some official documents, which convince him that Calomel has been most injudiciously and injuriously employed in the remittent fever of the West Indies, he has purposely refrained from making any animadversions upon that practice

APPENDIX.

BY A. W. IVES, M. D.

Observations on the modus operandi of mercurial medicines, and on their use in febrile diseases.

Mercury has become so fashionable a remedy at the present day, particularly the sub muriate of mercury, that by many it is esteemed as almost an indispensable agent in the treatment of febrile diseases; and yet so vague and discordant are the opinions of physicians, with regard to its modus operandi, that scarcely two can agree on the time, manner, and extent of its use. Each one has marked out imaginary rules for the regulation of his own practice: and though he may perhaps find himself unable to explain definitely, at all times, the reasons on which his judgment is determined, or the precise object which he designs to fulfil, still he thinks, there are certain symptoms, which he has learned from observation to regard as indicating a condition of the system which calls for the medical influence of a mercurial course. Indeed so imperfect and unsettled is our knowledge on this subject, that no one can be impugned for empiricism, how improper soever his practice may appear; for there is no inconsistency so extravagant that it cannot be supported by precedent, and no hypothesis so absurd, that it cannot be defended by books.

The writer has not the arrogance to imagine, that the following remarks will divest the subject of all its difficulties, when it has been so often unsuccessfully attempted by abler hands, but by availing himself of their knowledge and experience, he hopes to deduce some general prin-

ciples illustrative of the operation of mercurial medicines, which may be applied to their use in fevers.

Without adverting particularly to the contradictory opinions of numerous respectable writers, as to the propriety of the mercurial practice in various febrile diseases, it will be sufficient, for the present purpose, to show that some of the most approved and popular authors on the subject are inconsistent with themselves; and, that the medicinal properties of mercury are either misrepresented, or its operation must be incompatible with the indications which it is given to fulfil.

It was said by Cullen, that mercury acted as a stimulus to every sensible and moving fibre of the body, and this opinion has been received and propagated, with some unessential modifications, to the present period. In the mean time, and with this view of its modus operandi, it has been confidently recommended and most extensively used in the treatment of acute inflammatory fevers. It was introduced in New England, for this purpose, as early as the middle of the last century, and still continues to be a popular remedy. Dr. John Warren, in his treatise on the mercurial practice, published in 1813, says, "mercurial preparations increase the action of the heart and arteries, quickening the pulse in some instances, and in others rendering it stronger and fuller; consequently increasing the momentum of the circulating blood, and in this way rousing the whole system into action," &c. page 16th. At the 35th page he says, "The general testimony of practitioners, who have been much in the use of this medicine, is in favour of its exhibition in all stages of febrile disease, even in the commencement of the fever, or before it is formed." In Europe also the introduction of mercury in the treatment of acute phlegmasial diseases is registered as an important era in the profession. The name of Robert Hamilton is immortalized by its association with the mercurial

practice in inflammatory fevers. Blood-letting, in diseases of this character, has generally been thought advisable as preliminary to the use of mercury, but even this has not been deemed requisite by all; there have been those, it would seem, whose partiality for this remedy has led them to believe that it would supersede the necessity of all others. "Quicksilver," says Dr. Gilchrist, "is a powerful antiphlogistic, and removes inflammation without accelerating the motion of the fluids, which is rather reduced, by its subduing their inflammatory disposition." And Dr. Warren remarks, "Mercury quickens the pulse in health, in disease it renders it slower."

Now notwithstanding this testimony in favour of mercurial medicines during the violence of inflammatory fevers, it is impossible not to perceive an astonishing incongruity in the opinions entertained of their medicinal qualities, and of their agency in the cure of disease. There is a paradox involved in the theory and practice of the same authors, which shows conclusively that the subject is yet but imperfectly understood: it implies either a want of precision in language, an ignorance of the peculiar properties of the medicine, or gross absurdity in the exhibition of it in the sthenic type of disease. But independent of internal evidence, there is, at least, circumstantial testimony of the fallacy of the doctrine, in the *dissenting opinions* of some of the most learned and experienced of the profession. It cannot be considered a want of deference to the distinguished advocates of the mercurial practice (as it has very properly been denominated from their exclusive adherence to it) to distrust the soundness of their deductions, when they are not only opposed by the acknowledged principles of medical philosophy, but by the judgment and experience of such men as Robert Jackson and Dr. Lind. To these might be added numbers of the most celebrated physicians of England, France, and America, all of whom,

from clinical observation, have decided against the practice of resting the issue of febrile disease on the constitutional operation of mercury.

It is true that those who have most zealously commended this medicine, have not denied the danger and uncertainty of its operation; still they appear rather to have laboured to give to it the character of a specific, than to establish general principles which would reconcile the discrepancy of their theory and practice. "Could a line be fairly drawn," says Doctor Warren, "between the diseases in which it is prejudicial, and those in which it is advantageous; and could the mode of administration be accurately prescribed, much of that mischief which has originated from this most active class of medicines might be avoided, and many a constitution saved from ruin." But this is a knowledge which we can never hope to attain, and even if it were attainable, what would be the avail? There is a diversity in the character of the same diseases, arising from a difference in the circumstances or condition of the patients, which forbid the expectation that the science of medicine will ever be so perfected, and the labours of the physician so simplified, that a medicine can be safely prescribed for a name. It will continue to be the province of the physician to establish general principles from facts, and to mete out from these, such particulars as may be suitable to the multifarious characters and symptoms of disease; and until some general principles shall be settled for the better regulation of the mercurial practice in fevers, however extensive and popular it may be, it will continue to be empirical.

With a view to this object, I shall proceed to inquire in what manner mercurial medicines exert their influence on the human system, the various phenomena produced by them, and how far and under what circumstances they are applicable to the cure of fevers.

It would be incompatible with the brevity of these remarks, to enter into the controversy, or even to review the arguments that have been urged by the respective parties, relative to the modus operandi of medicines; nor would the subject have been mentioned, were it not that the following observations are founded on the belief, that mercury sometimes produces its effect by being absorbed into the circulation, sometimes by a direct impression on the nerves with which it is in contact, and at others, by a sympathetic action extended to distant parts through the medium of the nervous system, and consequently that neither of the popular theories of the day are alone sufficient to explain its diversified operation.

It cannot be denied, that modern improvements in the knowledge of the animal economy and in the science of chemistry, have disproved and exploded many vague notions of the ancient humoral pathologists; but they have not conclusively proved, that medicines are not sometimes received unchanged, as it respects their medicinal character, into the circulation, nor do they afford positive testimony that they operate exclusively through the agency of the nerves. Those who embrace the latter theory, avoid the errors and inconsistencies chargeable to the former, and from the undefinable nature and unbounded application of their fashionable hypothesis, it is ingeniously but speciously defended against their objectors; but still the doctrine appears to be better fitted to resist opposition than to explain facts, for though every, otherwise unaccountable, action in the animal economy, may be safely ascribed to nervous sympathy, yet it neither explains, defines, nor proves the nature of the phenomena. Instead therefore of exclusively adhering to any of the foregoing doctrines, I shall attempt to show, that the operation of mercury evinces to a certain extent the truth of them all.

Where mercury produces its specific action on the con-

stitution, it appears to be previously absorbed into the blood vessels. It there becomes a new and peculiar source of irritation to all the organs concerned in the circulation and the various secretions;—it extends its influence through the medium of the blood to the nervous system, increasing its irritability, and thereby reacting upon the heart and arteries, and thus perpetuates the train of constitutional morbid associations which constitute mercurial fever. The class of medicines denominated stimulants, have generally been supposed to exert their first agency on the nerves of the stomach, and from thence, through the medium of the brain and nerves, on the other parts of the system; but from the following considerations, it is contended that such is not the operation of mercury.

I. From its general effects on the system.

1st. One of the earliest evidences that the system is mercurialized, is an increased action in the heart and arteries, manifested by a quick and fretful pulse;—a pulse so peculiar, that by an accurate and experienced observer, it may often be detected, though he were previously ignorant of the patient's being under the influence of the medicine. This symptom is ordinarily less regarded as an indication of mercurial excitement than the more obvious one of salivation; and, indeed, it seldom attracts attention till the nervous system is also affected; but it is more uniformly attendant on general mercurial action than any local symptom; and it always precedes that morbid irritability of the nervous system which is evinced by restlessness, languor and debility. The salivary glands are more susceptible of mercurial irritation than any other part of the system, and hence an increased flow of saliva with swelling, or soreness of the gums are generally regarded as the surest indication of constitutional mercurial action. This as a

general rule is certainly a very correct one, but it is far from being infallible; for there are some instances where salivation cannot be produced though mercury be administered ever so judiciously for that purpose, when at the same time we have satisfactory assurances that the system is constitutionally affected by it. Another evidence that at this time the action of the medicine is principally confined to the blood-vessels is, that it does not cause as much constitutional excitement as is usually attendant on a rapid circulation produced by other artificial stimuli or by febrile irritation. The irritability seems to be almost exclusively confined to the heart and arteries, and to be owing to a change in the quality of their natural stimulus the blood.

2nd. From the diseases in which mercury is most efficacious as a remedy. These are fever,—the proximate cause of which is generally believed to be a morbid condition of the blood-vessels, and also diseases of the secretory organs, whose functions are intimately connected with, and almost solely dependent on the circulation. Whereas diseases seated more particularly in the nervous system are but remotely or indirectly influenced by mercurial action.*

3rd. From the extreme difficulty there is in mercurializing the constitution when there exists considerable deviation from the healthy action of the heart and arteries;—a circumstance which will be more fully considered hereafter, and which is mentioned as having an important bearing on the subject in question.

4th. Large quantities of mercurial medicines frequently lie dormant in the stomach or intestines for a great length of time; and again, the minutest portion will excite violent

* The operation of mercury in the cure of syphilis, though foreign to the present inquiry, might also be cited as evidence of its being diffused through the circulation.

mercurial fever. Such would not be the case, did they operate through the agency of the nerves.

5th. The disparity there is in the local and constitutional effects of mercury. When it abrades the surface of the alimentary canal so as to cause the most extreme local irritation, it is seldom diffused through the constitution; and where the constitution is affected by it, the local impression is most commonly imperceptible.

6th Experiments have conclusively proved, that animal poisons exert their influence through the medium of the blood-vessels, and there is the closest analogy in their operation and that of mercury. The action of both appears to depend greatly upon the susceptibility of the system to their operation. The variolous infection which proves fatal to one person, causes but a mild disease in another. The same remarks will apply to the operation of mercury. Both so far contaminate the circulating fluids as to keep up a permanent excitement for a considerable length of time, for as their properties can be destroyed by no antidote, their effects will continue till they are carried out of the system by its emunctories.

II. Mercury is proved to be absorbed into the circulation by the changes induced on the animal fluids.

1st. Blood drawn from a mercurialized patient not only exhibits the buffy coat indicative of an irritable condition of the heart and arteries, but its tenacity is sometimes partially or wholly destroyed.

2d. Mercury has been detected in the fluids. Metallic globules have been seen in the milk of a salivated woman. And it is well known, that the exhalation from the skin during mercurial action forms an amalgum with metals.

3d. From the sensible changes exhibited in the secretions generally as exemplified by metallic taste and offen-

sive odour of the breath, &c. And finally, from the peculiar influence of mercurial medicines being communicated from the mother to the nursing child.

When mercury is given in small doses and for a considerable length of time, so as to produce an alterative effect, it evidently operates through the medium of the circulation. Though its ultimate influence on the system when thus administered, is different from what it is when suddenly crowded to the extent of salivation, still its immediate effect if carefully observed, will be found to differ only in degree. If its action on the heart and arteries is less perceptible in the pulse, and from its milder operation its effects are not obviously extended to the nervous system, there are nevertheless positive evidence that it is silently operating changes, through the agency of the circulating fluids. The result is shown in the minutest ramifications of the blood vessels; sometimes stimulating them to a new and healthy action, as in the removal of various tumours, ulcers, topical congestions, &c.; at other times by thoroughly, though perhaps insensibly, changing the character of some one or all of the secretions.

Whether the effects of mercury in these cases are owing to a change produced in the properties of the blood, or in the functions of the secretory organs, or by both operating as successive means to the same end, it is not easy, nor is it important to this inquiry to decide; but the general analogy in the phenomena exhibited when mercurial action is suddenly produced, and to such an extent as to manifest itself in constitutional febrile irritation; and when it is excited so slowly and gradually as to effect imperceptibly, but radically and permanently a change in the various secretions, leaves little doubt that in both cases its agency is exerted through the medium of the circulation.

Such appears to be the most usual operation of mercury

when it is absorbed into the circulation; but its action is not uniformly the same, though administered apparently under the same circumstances. There is sometimes a peculiar susceptibility to its operation in a particular organ; and though in such cases the strongest evidences exist that the constitution is more or less affected by it, and therefore that it must have been received into the circulation, still its force is so much spent on the part thus predisposed to its action, that the constitution is sometimes but slightly affected when its local violence is great. It is impossible to foretell with certainty the partial operation of mercury, the organ to which its action will be determined, or to what degree it may be diverted from the constitution by local susceptibility.

Again, do we not sometimes see in the treatment of syphilis, a few grains of calomel produce a copious ptyalism, which lasts for many weeks, while in the mean time the constitution is so little affected, that the disease continues unabated or sometimes to increase? It is acknowledged, as observed above, that where such a salivation exists, with soreness of the gums, swelling of the glands, metallic taste, and offensiveness of the breath, the whole system may be, and generally is, *thoroughly* mercurialized, but this is not invariably the case. The writer of these remarks, has been twice salivated without any perceptible effects of the mercury on the constitution. The first time it was by taking ten grains of calomel with the same quantity of jalap, which in three hours operated briskly as a cathartic. Two days afterwards a tenderness of the gums and copious ptyalism ensued which continued for many days. The second time, three grains of calomel were taken in combination with ipecacuana; it operated as an emetico-cathartic, nevertheless salivation came on the next day.

When ptyalism is thus suddenly produced by a small

quantity of mercury, it may be of great practical importance to know, whether it be owing to constitutional or local susceptibility. If the constitution be unusually susceptible to mercurial action, the salivary glands in common with other parts of the system are liable to be suddenly and severely affected—and where from this general predisposition ptyalism is produced, it is unnecessary, nay dangerous to increase the dose of the medicine or to continue its use, on the supposition that enough has not already been taken to thoroughly mercurialize the constitution; for nothing is more obvious than that the beneficial effects of mercurial medicines are not to be estimated by their quantity.

On the other hand if ptyalism result from a peculiar susceptibility of the salivary glands, the action of the mercury on the local parts may be violent, but in the mean time so partial on the constitution, that there is no certainty of its eradicating constitutional disease. This is not an imaginary speculation; the truth of it has been confirmed not only by extensive observation in the treatment of syphilis, but by the effects of mercury in fevers; and it is believed, that in most cases of fever where death ensues after salivation comes on, that, notwithstanding the evidence of local mercurial action, the constitution is but very partially affected.

If these observations are true, they show that too much confidence may be attached to the effects of mercurial medicines on the salivary glands; but this is not all, for as has been observed, though these parts are in most instances more susceptible to mercurial irritation than any other, still they are not uniformly so. It is not an uncommon occurrence for mercury to show its effects exclusively on the skin, and apparently to be conveyed entirely out of the system by copious perspiration; and although it is impracticable in these cases to diffuse its influence through the

constitution, or to produce ptyalism, still there is the strongest evidence from the odour emitted from the skin and the change produced on metals in contact with it, that the mercury is passing off through its emunctories. There is sometimes a similar determination of this medicine to the kidneys. I have recently prescribed for a syphilitic patient, who, during four or five weeks, took various preparations of mercury without any other obvious effect than to increase the secretion of urine to more than double the ordinary quantity. During this local determination the disease continued to increase, nor were the salivary glands at all effected. There are other instances in which the whole force of the medicine is exerted on the liver.*

I have hitherto spoken of the effects of mercury as they are exhibited when it is absorbed into the circulating mass, and diffused through the system by the agency of the blood vessels. When administered under various and different circumstances, however, its operation appears to be local, and to be exerted chiefly on the nervous system. When calomel, for instance, is taken into the stomach in doses of from ten to fifteen grains, its action is principally spent upon the bowels; and there is no medicine which under ordinary circumstances more certainly increases their peristaltic motion. The turpeth mineral operates with still greater certainty as an emetic. In these cases the effects of the medicines seem to result from an impression made directly on the parts with which they are in contact. It would seem, also, that the effects of calomel on the bowels are sometimes two-fold; for when given in large and repeated doses in diseases attended with obstinate constipa-

* How far the susceptibility to the operation of mercury is increased or modified by disease, it is not easy to determine. If, for instance, a diseased liver is cured by a mercurial course, is it rendered peculiarly susceptible to the action of the medicine by disease, or is it only operated on in common with the other parts of the system?

tion of the bowels, it excites a counter irritation through the whole course of the alimentary canal, which has a powerful and salutary influence in diverting the force of the disease from the part affected. Such is supposed to be its operation in the cure of croup.

But the local operation of mercury is not exclusively on the parts with which it comes in contact. It operates also by nervous sympathy. In the first place, by irritating the mouths of the excretory ducts which open into the intestines, its action appears to be sympathetically extended to their corresponding glands, and thereby to exert a very important influence on all the secretory organs which are subservient to the process of digestion. Thus in order to secure suddenly the deobstruent effects of mercurial medicines on these parts, it is necessary to administer them uncombined with more active evacuents, and in small and repeated doses. If for instance six or eight grains of calomel, or of the black oxyde of mercury be given, in combination with twice the quantity of jalap, the compound will pass so rapidly through the bowels as to produce little or no effect on the secretory organs whose excretories open upon the surface of the intestines; but if the same quantity of the mercurial preparation be taken in doses of two or three grains at intervals of as many hours, or if but half the quantity be taken, and five or six hours afterwards a mild dose of jalap or castor oil, the action of the mercury will have extended to the secretions, and will be manifested by a plentiful discharge of bile and mucus.

If mercury be given in very small quantities, and repeated for a considerable length of time, the same sympathetic action and important changes appear to be produced on the chylopoetic functions, only varying in degree according to the quantity of the medicine administered and the duration of its continuance. There is this difference, however; in the latter case, from the gradual operation of

the mercury the secretions are more effectually and permanently changed, even though it be not given in sufficient quantity to obviously affect the constitution.*

It has been shown by the experiments of M. Bichat, and it is confirmed by daily observation, that the secretory action of glands is increased by stimulating the mouths of their excretory ducts : it is in this way that mercurial preparations usually excite their deobstruent effects as noticed in the foregoing pages; but they appear also to have a sympathetic action which is much more extensive. It is that which Mr. Hunter, in order to illustrate the spread of disease, has denominated continuous, and which Bichat has pointed out as being maintained with peculiar vigour between membranes of the closest similarity of

* I have now a patient under my direction whose case may illustrate the local and sympathetic action of mercury. He is a middle aged man, and has for many years been the subject of dispepsia so inveterate, that he has tried unsuccessfully almost every means that promised relief in medicine and regimen. One symptom of his disease has been constant irregularity in the functions of the liver,—sometimes its secretion being entirely suspended; at others so abundant that for weeks and even for months, successively, he has been obliged, when he rose in the morning, to press with his hands upon his sides and eject from the stomach from six to eight ounces of bile to prepare him for passing a comfortable day. Connected with this symptom, has been, alternately, obstinate constipation and unnatural laxity of the bowels. No medicines ever had the effect to regulate the action of these organs till accident taught him the use of small doses of calomel; not as an alterative or cathartic, for attempts had been made again and again to mercurialize his system, and that too by different physicians and with various mercurial medicines; but by taking one grain of calomel at bed time, it has the effect uniformly to produce one copious bilious evacuation from the bowels the succeeding day. This custom he has followed for months, and he informs me, that if the calomel be omitted for a single day costiveness ensues. Although he is without the hope of ever enjoying good health, his life is rendered comparatively comfortable by this course.

structure. In this way it seems that mercurial medicines when taken into the stomach, extend their operation to other and distant portions of the mucous membrane, producing an increased discharge from the kidneys, lungs, skin, &c. Other medicines frequently exert their influence by this sympathetic action, particularly on the mucous membranes; astringents are often applied to one portion of this membrane, to check a hemorrhage in another portion.

That mercurial medicines may increase the mucous secretions by operating at one time through the medium of the circulation, and at another time by sympathy, appears obvious from the following considerations.

When mercury operates through the medium of the circulation, its action is gradually excited and permanently continued, and its presence is demonstrable, in the excretions; as for instance, by the amalgam formed with the exhalation of the skin with metals. There is also in most instances a general increased irritability in the system indicated by restlessness, tremors, and a frequent pulse. On the contrary, the sympathetic action of mercury is manifested suddenly. If it operate on the skin, it is no sooner received into the stomach than a diaphoresis ensues, more copious than when the whole system is mercurialized; but it is only continued for a short time, unless the impression be renewed by a repetition of the medicine. It does not increase the rapidity of the circulation, or the irritability of the nervous system; for the sweating has a tendency to diminish the force of the heart and arteries, and further than this the constitution is not affected.

If the foregoing observations be correct, there is a wide difference between the action of mercurial medicines and that of any other belonging to the class of stimulants: if such a distinction is in any case allowable, mercury may with more propriety be denominated an irritant than a sti-

mulant; whether we consider its constitutional or its local action, this term is better suited to express the peculiarity of its operation. Its agency in superseding febrile action is exerted on the heart and arteries as a counter-irritant: and as an irritant, it quickens the action of the stomach and bowels, and that of the distant secretory organs sympathetically associated with them.

Nor does mercury, as has often been contended, possess the properties of a *tonic:*—so far from increasing the tone of the muscular fibre, or the excitability of the nervous system, it diminishes both in a direct ratio to the irritation which it excites. When the constitution is suddenly mercurialized, this is obviously the case, as appears from the attendant debility and emaciation; and when administered as an alterative, there is reason to believe that its immediate effects are the same, though the salutary change wrought in the secretory functions, together with the beneficial effects of tonics, which are generally administered at the same time, may more than counterbalance the irritation and consequent exhaustion induced by the mercury, and thus the strength of the patient may increase and his general health improve under a mild mercurial course, though the action of mercury be opposite to that of a tonic.

In recapitulating the foregoing remarks, it appears that mercury operates as an Irritant, and that its operation is either Constitutional, or Local.

I. When its action is Constitutional, mercury is absorbed into the circulation; it imparts new qualities to the blood, becomes a source of irritation to the heart and arteries, and through them to the secretory and nervous systems. Its action varies in degree, according to the mode of its administration.

1. When mercury is administered at short intervals, it excites a peculiar irritability in the heart and arteries, and a

corresponding irritation in the nervous system ; constituting *mercurial fever.*

2nd. When administered at longer intervals and in smaller quantities, it causes little or no perceptible alteration in the rapidity of the circulation, or the energy of the nervous influence ; but its operation is evinced by an increase or change in some one or all of the secretions. Such is its operation as an *alterative.*

3rd. Sometimes, when administered for the purpose of mercurializing the constitution, its action is not equalized as in the foregoing cases ; but from an unaccountable local predisposition, its influence is principally spent upon one organ, so that it has but a slight effect upon the constitution. In this case its operation may be denominated *partial.*

II. The operation of mercury is Local.

1st. It acts upon the parts with which it is in contact : this action is manifested by an increase of the peristaltic motion of the intestines, and it is believed also to excite a counter irritation on their surface, and thus divert the force of disease from a distant part.

2nd. By continuous sympathy ;—its action being extended from that portion of the mucous membrane on which it was first exerted to the contiguous glands through the agency of their excretory ducts, and also to the more remote organs of similar structure, embracing the lungs, skin, &c.

Such appear to be the various modes in which mercurial medicines operate, and such their diversified action in removing disease : it remains to inquire how far they are applicable to the cure of fevers. A full investigation of this subject would far exceed the limits prescribed to this essay,

so that the following desultory remarks will be principally on the propriety of administering them for the purpose of exciting constitutional mercurial fever.*

The mercurial practice in fevers is founded on the hypothesis of Mr. Hunter, that two diseased actions cannot exist in the constitution at the same time. The mercury is given with a view to excite a diseased action, less dan-

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* It is necessary to observe, that the subject has been thus far considered, on the supposition that the characteristic properties and effects of mercury are common to all its medicinal preparations; but notwithstanding their general analogy, each one possesses virtues peculiar to itself, and under some circumstances is preferable to any other; and perhaps the most important duty of the practitioner, next to that of suitably preparing the system for the constitutional operation of mercury, is to select the preparation best adapted to his particular case.

Where the speedy effects of the medicine are required, as in the treatment of febrile diseases, calomel, or the *sub-muriate of mercury* is to be preferred; for whether it be administered for the purpose of evacuating the bowels, or of promoting the secretions, or of exciting general mercurial action, it is more prompt in its operation than any other mercurial remedy.

The blue pill, or *black oxyde of mercury*, is the mildest form in use, and that which is liable to the fewest objections. From the difficulty and labour of preparing it, and the uncertainty of obtaining it properly prepared from druggists, it is not so commonly employed as calomel; but as a deobstruent in diseases of the digestive organs, particularly in those of children, and in the primary forms of syphilis, it is equally efficient, more mild, and less hazardous in its operation than any other form of mercury; nor is it inferior to calomel in ordinary cases as a cathartic.

The corrosive sublimate, or *muriate of mercury*, is particularly applicable to the cure of chronic congestions and obstinate cutaneous diseases, for it appears to pervade more extensively than any other preparation, the extreme parts of the circulation, and thus to exert its influence more thoroughly as an alterative. With regard to the peculiar virtues of the mercurial ointment, nothing need be added to the observations in the text in the author's excellent directions for conducting a mercurial course. See page 60.

gerous than the primary fever, yet sufficiently powerful to supersede it. That such is sometimes its effect will not be denied; it is the unanimous verdict of experience, that constitutional mercurial action and idiopathic fever seldom exist together, and the foregoing is a very plausible explanation of the phenomenon. It will be perceived, therefore, that in febrile diseases, and particularly in those of a dangerous or malignant character, this course of treatment presents high claims, and such as are not readily rejected.

He who can persuade himself, that after making every effort to mercurialize his febrile patients, his professional duty is fulfilled, and rest satisfied with the issue, from the conviction that that being done, he has given them the fairest means of recovery which the present state of the healing art affords, will not only avoid the pain of fear, but, what is infinitely more distressing to most minds, the pain of thought.

It is well known, that there are those of high rank in our profession, who without regard to circumstances, have relied almost exclusively and with much complacency, upon this theory, in the treatment of epidemic fevers.

If it were always practicable suddenly to excite mercurial action, the objections, that the fever in some few instances is not subdued by it, and that in others the effects of the medicine have been known to prove fatal, are not so formidable but that it would be prudent practice to hazard them in all fevers of dangerous character, rather than to forego the superior advantages which a mercurial course of treatment would still offer to any other. In the first case, the exceptions are by no means sufficiently numerous to destroy the force of a general rule, and the second objection might be principally obviated by the skill and care of the physician.

But there are other and more weighty objections than these; for though we are assured by those who advocate

the use of mercury, and place their chief reliance upon it in the treatment of febrile diseases, that it is a sovereign remedy, whenever it excites ptyalism, still it is to be recollected, that this is by no means a uniform effect, and that it is yet a question of dispute, whether more lives have been prolonged by a timely salivation, than have been lost by the unsuccessful use of mercury to the exclusion of other means. To estimate correctly, therefore, the merits of this practice, and to be able to judge of the extent to which it should be carried, it is necessary to inquire what condition of the system is most favourable to mercurial action, and how far and by what artificial means such a susceptibility can be created.

I have attempted to show, that mercurial medicines operate on the constitution through the medium of the blood; and if this supposition be correct, the susceptibility to their operation would naturally be supposed to depend on the condition of the heart and arteries. Such is unquestionably the fact, and although writers appear to have dwelt less upon the subject than its importance deserves, yet almost every one who has recorded his own observation on this subject, has given ample proof that where mercury has failed to produce its specific effects, it has most commonly been in those fevers where there was the greatest derangement in the circulation.

Mercurial action then, cannot readily be produced where there is much morbid excitement, or a feeble and exhausted condition of the vascular system; so that the indications, most unfavourable to this action, are the rapid tense pulse of an acute inflammatory fever, and the low and languid circulation of asthenic disease.

There is perhaps more truth than novelty in this position, but certainly, it appears not to have been much regarded in practice, or at least, that too little stress has been laid upon the importance of avoiding the use of mercury under

such circumstances, till a preparatory course of means should be instituted to secure its operation.

Doctor Chisholm, who values mercurial medicines as paramount to all others, incidentally mentions their failure in the low and comatose state of fever, and says, that by increasing the stimulus or tone of the system by bark, the mercury was enabled to act; and afterwards, he remarks, "I have a thousand times seen (on the contrary,) that the operation of the mercury is forwarded by diminishing the tone of the system by very liberal bleedings." By examining the cases of Doctor Chisholm and others, in which mercurial action was produced, and comparing them with those in which it was unsuccessfully attempted, the results will be found in almost every instance to corroborate the position which is laid down above; the same remark is applicable to all the various epidemic fevers in which mercury has been extensively employed. Whenever the fever has been characterised by a high degree of arterial excitement, mercurial action has never been readily produced, unless preceded by copious depletion; and on the other hand, whenever it has been attended with a feeble and languid circulation, if mercury has been efficacious, it has been after the energy of the heart and arteries has been partially restored by tonics. It has been observed, that the object of this paper is to deduce general principles, rather than to detail facts; otherwise it would be easy to cite authorities in proof of this statement; the observation, however, of every reader who has been conversant with the operation of mercurial medicines, will furnish testimony in support of it.

If it be asked, why less discrimination should have been exercised in the administration of this than in that of other medicines, the answer is, because it has too often been regarded as a *specific*;—a term which, with science, has no legitimate relation. This remark is illustrated by the

daily use of mercury in syphilis. Notwithstanding the precautionary directions which books afford, how often do we see mercury prescribed in this disease (till error is corrected by experience) without a preparatory course of treatment, without auxiliary medicines, and without restrictions in regimen or diet. The consequence is the greatest uncertainty when and how it will operate. Most commonly, however, if the patient happen to be of a plethoric habit, and if there be much arterial excitement, the medicine is crowded for weeks without affecting the constitution, and without benefit to the disease; and when it ultimately takes possession of the system, (perhaps from the patient being driven from his excesses by the increasing violence of his disease,) its ravages upon the constitution are vastly more formidable than those which it was designed to correct. The frequent opportunities there are for observing the operation of mercurial medicines in this disease, serve to exemplify very clearly, the peculiarity of their action, and to show what condition of the system is most favourable to their constitutional effects; and as they evince most conclusively, the necessity of regulating the action of the heart and arteries, in order to secure a salutary mercurial action in syphilis, it is the strongest evidence that it is still more necessary, that it should be done in the wide range of arterial action exhibited in various febrile diseases.

It has been observed by my friend Doctor Smith, (see note, page 25.) that the system is probably most susceptible of mercurial action in perfect health, but it appears to me, that when moderate depletion is premised, either with the lancet or by cathartics, according to the temperament and habit of the patient, so as to lessen the natural force of the circulation, and to open pretty freely the emunctories of the skin, mercury operates more speedily and more mildly than it does under any other circum-

stances. Cutaneous perspiration has such an intimate connection with, and dependence on the circulation, that it is perhaps the best criterion of the susceptibility of the system to mercurial action. I have never known ptyalism produced in fever where the skin was perpetually dry, and even in diseases unattended with febrile excitement, have generally been able to form a correct prognosis of the effects of mercury from the state of this secretion. Hence the importance of combining antimonial preparations with calomel: their effects in diminishing the force of the heart and arteries are the same, though milder in degree, as those of blood-letting; and in febrile diseases, they may sometimes be safely and advantageously employed for that purpose, when the abstraction of blood would be dangerous.

Although in the foregoing observations fever has been represented as being always accompanied with a morbid condition of the heart and arteries, and mercurial action as incompatible with the extremes of such a condition of the blood-vessels, still there are unquestionably some febrile diseases, in the treatment of which, mercury is clearly indicated, and during which its constitutional effects may be readily excited. If in designating diseases, nosologists have not yet been able to draw the lines of demarkation so distinctly, that a remedy so potent as the one in question can be made uniformly applicable to a name; there is, nevertheless, sufficient consistency in the association of febrile symptoms, to enable a careful observer to avoid empiricism. Dr. Robert Jackson, the most experienced and accurate clinical observer of the age, sums up the result of his observations on this subject in the following general remarks.

"I think I am warranted from an unprejudiced review of the whole" [subject of the mercurial practice in fevers,] "to confide in the following conclusion, viz. 1st. That

where the disease is of the intermittent or remittent type, the intermission or remissions distinct, the skin soft, thin, warm and perspirable, the pulse free and expansible; in short, where the symptoms are of a secondary degree of violence, the salivary glands are for the most part soon affected by mercury, whether given internally or applied externally by friction; and that where the salivary glands are affected, and a free and copious salivation established, the disease ordinarily abates in force, even sometimes ceases altogether. The rule is general, but not absolute. Instances occur, and not unfrequently, where the paroxysms return after salivation is fully established; even some are recorded, where death has not been averted though the reputed sign of safety was present. 2nd. Where fever is of the continued kind, whether endemic, epidemic, or contagious, the symptoms violent, the heat ardent, the skin thick and compacted, dry and torpid, as connected with excessive excitement and precipitate action, or thick, greasy, damp, and inanimate, as connected with constriction and diminished energy of the capillary system, calomel is sometimes given internally in great extent, mercurial ointment being at the same time rubbed upon the surface in great quantity, without the salivary glands being in any degree affected by it; in other cases the gums become spongy and livid, the breath emits the mercurial fœtor, but no increase takes place in the salivary secretion, and no change is effected on the course of the disease, which proceeds uninterruptedly to a fatal or favourable termination, independently of saturation of the system with mercury. The conditions now described are extremes; they comprehend what is most important relative to the effects of mercury as a remedy for the cure of recent fevers. 3rd. In fevers of slow movement and protracted duration, more particularly in such as are complicated with congestion in the more important organs within the abdo-

minal cavity, the internal exhibition of mercury and the external application of it by friction, carried to the extent of producing more or less of ptyalism, has appeared to myself to be a remedy of value; in fact, to be often the only remedy, especially as aided by medicated diets, by bathing, frictions, the occasional abstraction of blood in small quantity, with exercise by gestation, on which any dependance can be placed for effecting a cure or even for prolonging of life; it appears, as conducted in this manner, to operate changes on diseased organization, or to lay a foundation on which such changes as lead to health may be effectually operated by other means."—Jackson on Fevers, vol. i. page 284–5. 1820.

In connection with the foregoing remarks, it ought to be recollected, that in the low latitudes of the West India islands, the character of disease more frequently indicates the use of mercury, and the constitution is, ceteris paribus, more susceptible to its operation than in this climate.

Our intermittent fevers are seldom so obstinate as not to yield readily to milder remedies; and, excepting in those cases, which from repeated attacks or long continuance are complicated with local congestion, mercury is very properly prohibited.

In typhus, it is at least questionable whether mercurial salivation ought ever to be attempted;—indeed, in most instances, until by the natural course of the disease, or the aid of other remedies, the violence of the fever is subdued, it is found impracticable to effect it. There is sometimes during the progress of this form of fever, a deranged state of the secretions which may be corrected by small doses of calomel, or the blue pill. I have observed them to effect a favourable change when the appearance of the tongue was peculiarly clean, dry, smooth, and shining,—a symptom which I have supposed to be owing to a suspension of the secretion of the mucous membrane of the alimentary

canal. I have often seen mercury administered where this symptom existed, with a view to excite ptyalism, but have never known it to be produced in a single instance.

In continued fevers, both of an inflammatory and typhus character, there is danger in attempting to excite mercurial action, from the uncertainty there is when and to what extent it will be produced. While there continues much morbid derangement in the action of the heart and arteries, there is no reason to expect that the mercury will be absorbed into the circulation; and if it be exhibited for that purpose, till by the progress of the disease and the agency of other means, the system is rendered susceptible to its operation, it may be accumulated in such quantity in the alimentary canal, (if not carried off by catharsis,) that when it once takes effect, the violence of its action will be more to be dreaded than the consequences of the fever.

Such is not unfrequently the result where mercury is exhibited in large quantities to children labouring under inflammatory disease. From the rapidity of their circulation, young children, ordinarily, are not very susceptible of mercurial action, and they are still less so when excited by fever; but there has been instances where the most alarming ptyalism and ulceration have ensued after the crisis of the fever.

As a general rule, therefore, it is believed that mercurial excitement should only be attempted in fevers of a remittant form, and in those which are symptomatic of local inflammation; and, in such cases of these only, as are protracted or dangerous after liberal depletion. Chronic congestions may exist as the sequel of phlegmasial fever, and it may require the use of mercury to remove them, but in this state they are not necessarily identified with febrile disease.

With remittent fever, there is connected a morbid con-

dition of the bilious secretion, and not unfrequently some local inflammation;—symptoms, which, independent of the attendant fever, indicate the use of mercury; and when the circulation is moderated, and the secretions freely opened by the necessary evacuants, there is generally sufficient remission of the fever to favour the action of the medicine.—Under such circumstances mercurial action may be easily and advantageously excited.

With regard to the specific effects of mercury in diseases belonging to the order phlegmasia, there can be no doubt that it is sometimes of great service after the ardour of the fever is diminished by copious depletion, and particularly, after the local inflammation assumes a passive character; but it is of no small importance to recollect, that there is sometimes a quick and rapid pulse in this stage of these diseases, which is unfavourable to the action of mercury, and which is rather increased than diminished by the lancet. This state of the circulation seems to depend on the irritation of the vascular system, and is not unlike that which I have attempted to describe occasioned by the action of mercury. It is during this condition of the circulation, that so much benefit is derived from the use of antimonial medicines, of cholchicum, of digitalis, and of opium; and hence the correctness of the observation of Chene, that "If it be wished to place the constitution suddenly under the influence of mercury, there are but two means, apparently opposite, namely, blood-letting and opium." It cannot be supposed that these preparatory remedies are alike applicable to the same state of the system, and therefore that they may be employed indifferently, but if it be true, that any considerable deviation from a healthy action of the blood vessels, whatever may be the cause, is unfavourable to the operation of mercury, it is clear that opposite means may be adapted to the same end.

The contradictory statements that have been made as

to the effects of mercury, and the narcotics above mentioned, in phlegmasial diseases, can only be reconciled on the supposition, that writers have not been sufficiently careful to discriminate between the rapid circulation which is kept up by extreme irritability of the heart and arteries, and which is rather increased than lessened by blood-letting; and the quick and corded pulse which is characteristic of those diseases before depletion. In one instance the action of the blood-vessels is moderated by the lancet, in the other by nauseating doses or by narcotics. The agency of some one or all of these means may be necessary to prepare the system for mercurial action, but judgment and discrimination are necessary to adapt them suitably to the nature of the case.

THE END.